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D E C L A R A T I O N

I, Naomi YAMAMOTO of c/o HATTA & ASSOCIATES, Dia Palace Nibancho, 11-9, Nibancho, Chiyoda-ku, Tokyo, Japan do solemnly and sincerely declare:

1. That I am well acquainted with the English and Japanese languages, and
2. That the attached document is a full and faithful translation into the English language made by me of Japanese Patent Application No. 2000-296861 duly certified by Commissioner of Patent Office to the best of my knowledge and belief.

Declared at Tokyo Japan on this 9 th day of February, 2007.

Naomi Yamamoto

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JAPAN PATENT OFFICE

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DATA TRANSMIT-RECEIVE SYSTEM AND DATA TRANSMIT-RECEIVE METHOD USING PORTABLE TERMINAL

[Claims]

[Claim 1] A data transmit-receive system comprising:

a portable terminal comprising a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances;

a first device comprising a communicating means for communicating through a computer network and a local communication means corresponding to said local communication means, and transmitting a device information to said portable terminal using said local communication means; and

a second device comprising a communicating means for communicating with said portable terminal through said mobile telecommunication network, and a communicating means for communicating with said first device through said computer network, and transmitting data to said first device through said computer network based on said device information obtained from said portable terminal through said mobile telecommunication network.

[Claim 2] A data transmit-receive system as claimed in claim 1, in which said device information includes an identification code of said first device and a communication protocol.

[Claim 3] A data transmit-receive system as claimed in claim 2, in which said identification code is one of a designation by means of a server name and a directory name, a designation by means of a URL, an IP address and an E-mail address.

[Claim 4] A data transmit-receive system as claimed in claim 2, in which said device information includes a specification information of said first device.

[Claim 5] A data transmit-receive system as claimed in claim 4, in which said first device comprises a printing means wherein said specification information includes a printing resolution, a printing mode, a control command, and a paper size, and said data is composed of document data.

[Claim 6] A data transmit-receive system as claimed in claim 2, in which said first device supports a plurality of protocols in which said data transmit-receive system further comprises a means for alternatively designating one of said protocols.

[Claim 7] A data transmit-receive system as claimed in claim 1, in which said first device supports a security function in which said data transmit-receive system further comprises a means for inputting a password for releasing said security function.

[Claim 8] A data transmit-receive system as claimed in claim 1, further comprising a means for canceling a data transmission from said second device to said first device.

[Claim 9] A data transmit-receive system as claimed in claim 1, further comprising a means for holding a data transmission from said second device to said first device.

[Claim 10] A data transmit-receive system as claimed in claim 1, in which said first device consists of a plurality of first devices in which said transmit-receive system further comprises a means for selecting one of said first devices as a destination device.

[Claim 11] A data transmit-receive system comprising:

a portable terminal comprising a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances;

a first device comprising a communicating means for communicating through a computer network and a communication means for communicating with said portable terminal through said mobile telecommunication network; and

a second device comprising a communicating means for communicating with said first device through said computer network and a local communication means corresponding to said local communication means of said portable terminal,

in which said second device transmits a device information to said portable terminal through said mobile telecommunication network,

said portable terminal transmits said device information of said second device to said first device using said local communication means, and

said first device transmits a device information of self to said second device through said computer network based on said device information of said second device to request a data transmission.

[Claim 12] A data transmit-receive system comprising:

a first portable terminal comprising a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances;

a first device comprising a communicating means for communicating through a computer network and a local communication means corresponding to said local communication means of said first portable terminal and transmitting a device information to said first portable terminal through said mobile telecommunication network;

a second portable terminal comprising a communicating means for communicating with said first portable terminal through said mobile telecommunication network and a local communication means for communicating in short distances, and receiving said device information from said first portable terminal through said mobile telecommunication network; and

a second device comprising a communicating means for communicating with said first device through said computer network and a local communication means corresponding to said local communication means of said second portable terminal,

and transmitting data to said first device through said computer network based on said device information obtained from second portable terminal using said local communication means of said second device.

[Claim 13] A data transmit-receive system as claimed in claim 12, in which said second device consists of a plurality of second devices in which said transmit-receive system further comprises a means for selecting one of said second devices as a source device.

[Claim 14] A data transmit-receive system as claimed in claim 12, in which said data is composed of encoded data of voice data

in which said first device has a codec means for coding/decoding said voice data and performs encoding of said voice data transmitted from said first portable terminal through said local communication means in order to transmit it to said second device through said computer network, and decoding of encoded data transmitted from said second device through said computer network into voice data in order to transmit it to said first portable terminal using said local communication means, and

said second device has a codec means for coding/decoding said voice data and performs encoding of voice data transmitted from said second portable terminal through said local communication means in order to transmit it to said first device through said computer network, and decoding of encoded data transmitted from said first device through said computer network into voice data in order to transmit it to said second portable terminal using said local communication means.

[Claim 15] A portable terminal comprising:

a local communication means for receiving a device information transmitted from a first device, which comprises a communicating means for communicating through a computer network and a local communication means for communicating in

short distance, by means of said local communication means of said first device; and

a communicating means for transmitting said device information through a mobile telecommunication network to a second device, which comprises a communicating means for communicating through said mobile telecommunication network, and a communicating means for communicating with said first device through said computer network, to cause said second device to transmit data toward said first device through said computer network.

[Claim 16] A data receiving device comprising:

a local communication means for transmitting a device information to a portable terminal which comprises a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances; and

a communicating means for receiving data through a computer network, based on said device information, from a data transmission device which comprises a communicating means for obtaining said device information from said portable terminal through said mobile telecommunication network, and a communicating means for communicating through said computer network.

[Claim 17] A data transmission device comprising:

a communicating means for obtaining, from a portable terminal, which comprises a communicating means for communicating through a mobile telecommunication network and a communication means for communicating in short distances, through said mobile telecommunication network, a device information from a data receiving device, which comprises a local communication means corresponding to said local communication means; and

a communicating means for transmitting data toward said data receiving device through said computer network based on said device information.

[Claim 18] A data transmit-receive method comprising the steps of;

requesting a device information of a first device from a portable terminal through a mobile telecommunication network;

obtaining said device information of said first device using a local communication means for communicating in short distances;

transmitting said device information from said portable terminal to a second device through said mobile telecommunication network; and

transmitting data from said second device to said first device through a computer network based on said device information.

[Description of the Invention]

[0001]

[Field of the Invention]

This invention relates to data transmission and reception using a portable terminal.

[0002]

[Prior Art]

The portability is an important issue for portable terminals, and size and weight reductions and power saving are emphasized in the development. Thus, the portable terminals often have severe restrictions on functions other than communications. For that reason, it has been proposed to supplement the functions of a portable terminal by using another device located nearby to realize the functions that the portable terminal does not have.

[0003] For example, Japanese Unexamined Patent Publication No. H09-284847 (A) discloses a portable wireless communication system using cellular phones, PHS, land mobile radiotelephones, pagers, etc. This system allows the user, who goes out, to receive facsimile transmission at a portable terminal carried by the user and print received image data by

any facsimile device where the user is located.

[0004]

[Problems to be Solved by the Invention]

However, according to the above invention of the publication, the entire facsimile data has to be received and stored into the storage unit of the portable terminal. Therefore, the transmission and reception of the data is restricted by the capacity of the storage unit of the portable terminal. Moreover, the aforesaid invention cannot be applied to transmission and reception of data other than facsimile data so that its usage is limited.

[0005] This invention has been produced for the purpose of solving the problems suffered by the prior art as mentioned above, and aims to provide a technology for realizing a function that a portable terminal does not have using another device located nearby without being restricted by the functions of the portable terminal while having a general applicability concerning data transmission and reception.

[0006]

[Means to Solve the Problems]

This invention for accomplishing the above-mentioned purpose is constituted as follows.

[0007] (1) A data transmit-receive system comprising:

a portable terminal comprising a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances;

a first device comprising a communicating means for communicating through a computer network and a local communication means corresponding to said local communication means, and transmitting a device information to said portable terminal using said local communication means; and

a second device comprising a communicating means for communicating with said portable terminal through said mobile telecommunication network, and a communicating means for

communicating with said first device through said computer network, and transmitting data to said first device through said computer network based on said device information obtained from said portable terminal through said mobile telecommunication network.

[0008] (2) A data transmit-receive system as claimed in the above (1), in which said device information includes an identification code of said first device and a communication protocol.

[0009] (3) A data transmit-receive system as claimed in the above (2), in which said identification code is one of a designation by means of a server name and a directory name, a designation by means of a URL, an IP address and an E-mail address.

[0010] (4) A data transmit-receive system as claimed in the above (2), in which said device information includes a specification information of said first device.

[0011] (5) A data transmit-receive system as claimed in the above (4), in which said first device comprises a printing means wherein said specification information includes a printing resolution, a printing mode, a control command, and a paper size, and said data is composed of document data.

[0012] (6) A data transmit-receive system as claimed in the above (2), in which said first device supports a plurality of protocols in which said data transmit-receive system further comprises a means for alternatively designating one of said protocols.

[0013] (7) A data transmit-receive system as claimed in the above (1), in which said first device supports a security function in which said data transmit-receive system further comprises a means for inputting a password for releasing said security function.

[0014] (8) A data transmit-receive system as claimed in the above (1), further comprising a means for canceling a

data transmission from said second device to said first device.

[0015] (9) A data transmit-receive system as claimed in the above (1), further comprising a means for holding a data transmission from said second device to said first device.

[0016] (10) A data transmit-receive system as claimed in the above (1), in which said first device consists of a plurality of first devices in which said transmit-receive system further comprises a means for selecting one of said first devices as a destination device.

[0017] (11) A data transmit-receive system comprising:

a portable terminal comprising a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances;

a first device comprising a communicating means for communicating through a computer network and a communication means for communicating with said portable terminal through said mobile telecommunication network; and

a second device comprising a communicating means for communicating with said first device through said computer network and a local communication means corresponding to said local communication means of said portable terminal,

in which said second device transmits a device information to said portable terminal through said mobile telecommunication network,

said portable terminal transmits said device information of said second device to said first device using said local communication means, and

said first device transmits a device information of self to said second device through said computer network based on said device information of said second device to request a data transmission.

[0018] (12) A data transmit-receive system comprising:

a first portable terminal comprising a communicating

means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances;

a first device comprising a communicating means for communicating through a computer network and a local communication means corresponding to said local communication means of said first portable terminal and transmitting a device information to said first portable terminal through said mobile telecommunication network;

a second portable terminal comprising a communicating means for communicating with said first portable terminal through said mobile telecommunication network and a local communication means for communicating in short distances, and receiving said device information from said first portable terminal through said mobile telecommunication network; and

a second device comprising a communicating means for communicating with said first device through said computer network and a local communication means corresponding to said local communication means of said second portable terminal, and transmitting data to said first device through said computer network based on said device information obtained from second portable terminal using said local communication means of said second device.

[0019] (13) A data transmit-receive system as claimed in the above (12), in which said second device consists of a plurality of second devices in which said transmit-receive system further comprises a means for selecting one of said second devices as a source device.

[0020] (14) A data transmit-receive system as claimed in the above (12), in which said data is composed of encoded data of voice data

in which said first device has a codec means for coding/decoding said voice data and performs encoding of said voice data transmitted from said first portable terminal through said local communication means in order to transmit

it to said second device through said computer network, and decoding of encoded data transmitted from said second device through said computer network into voice data in order to transmit it to said first portable terminal using said local communication means, and

said second device has a codec means for coding/decoding said voice data and performs encoding of voice data transmitted from said second portable terminal through said local communication means in order to transmit it to said first device through said computer network, and decoding of encoded data transmitted from said first device through said computer network into voice data in order to transmit it to said second portable terminal using said local communication means.

[0021] (15) A portable terminal comprising:

a local communication means for receiving a device information transmitted from a first device, which comprises a communicating means for communicating through a computer network and a local communication means for communicating in short distance, by means of said local communication means of said first device; and

a communicating means for transmitting said device information through a mobile telecommunication network to a second device, which comprises a communicating means for communicating through said mobile telecommunication network, and a communicating means for communicating with said first device through said computer network, to cause said second device to transmit data toward said first device through said computer network.

[0022] (16) A data receiving device comprising:

a local communication means for transmitting a device information to a portable terminal which comprises a communicating means for communicating through a mobile telecommunication network and a local communication means for communicating in short distances; and

a communicating means for receiving data through a computer network, based on said device information, from a data transmission device which comprises a communicating means for obtaining said device information from said portable terminal through said mobile telecommunication network, and a communicating means for communicating through said computer network.

[0023] (17) A data transmission device comprising:

a communicating means for obtaining, from a portable terminal, which comprises a communicating means for communicating through a mobile telecommunication network and a communication means for communicating in short distances, through said mobile telecommunication network, a device information from a data receiving device, which comprises a local communication means corresponding to said local communication means; and

a communicating means for transmitting data toward said data receiving device through said computer network based on said device information.

[0024] (18) A data transmit-receive method comprising the steps of;

requesting a device information of a first device from a portable terminal through a mobile telecommunication network;

obtaining said device information of said first device using a local communication means for communicating in short distances;

transmitting said device information from said portable terminal to a second device through said mobile telecommunication network; and

transmitting data from said second device to said first device through a computer network based on said device information.

[0025]

[Working Example]

The embodiments of this invention will be described below with reference to the accompanying drawings.

[Embodiment 1-1]

The data transmit-receive system according to Embodiment 1-1 is, as shown in Fig. 1, includes a portable terminal 10, a data receiving device (first device) 30, and a data transmission device (second device) 50.

[0026] The portable terminal 10 is communicable with the data receiving device 30 by means of wireless connection with external devices for short distance communications, and also with the data transmission device 50 via the mobile telecommunication network 70. Specifically, the portable terminal 10 has a means of communicating through the mobile telecommunication network 70 as well as a local communication means for communicating in short distances. In more detail, the mobile telecommunication network 70 includes a base station 71 that communicates wirelessly with the portable terminal 10, a base station 73 that communicates wirelessly with the data transmission device 50, and a mobile switching center 72 that connects the base station 71 and the base station 73. When both the portable terminal 10 and the data transmission device 50 are located within the same cell, they share the common base station.

[0027] The data receiving device 30 includes a communication means of communicating through the computer network 90 and a local communication means for short distance communications related to the local communication means. The data transmission device 50 has a communication means of communicating with the portable terminal 10 via the mobile telecommunication network 70 and a means of communicating with the data receiving device 30 via the computer network 90.

[0028] Therefore, the data receiving device 30 and the data transmission device 50 are communicable via the computer network 90. The computer network 90 is, e.g., local area

network (LAN), wide area network (WAN), or the Internet.

[0029] The constitutions of the portable terminal 10, the data receiving device 30, and the data transmission device 50 will be described in detail referring to Fig. 2 through Fig. 4.

[0030] The portable terminal 10 is, as shown in Fig. 2, includes a control unit (CPU) 11, a read only storage unit (ROM) 12, a random access storage unit (RAM) 13, a data processing unit 14, an operating unit 15, a voice input/output unit 16, an interface 17 for the mobile telecommunication network 70, an interface 18 for the wireless connection with external devices, and a battery 19, all of which are interconnected via the bus 20. The operating unit 15 includes keyboard for entering data and a liquid display for displaying data. The voice input/output unit 16 includes a microphone for inputting voices and a speaker for reproducing voices.

[0031] The wireless LAN standard (IEEE 802.11) using 2.4 GHz band electromagnetic waves or infrared rays with wavelengths of 850 nm to 950 nm, the Bluetooth standard using 2.4 GHz band electromagnetic waves, or the IrDA (infrared data association) standard for infrared ray data communications are applicable to the wireless connection between devices. If PHS (personal handy phone system) is used as a portable terminal 10, the transceiver function of PHS is applicable to the wireless connection between devices.

[0032] The data receiving device 30 is a digital color copying machine and, as shown in Fig. 3, includes a control unit (CPU) 31, a read only storage unit (ROM) 32, a random access storage unit (RAM) 33, a data processing unit 34, an operating unit 35, an image reading unit 36, a printing unit 37, an interface 38 for the computer network 90, and an interface 39 for the wireless communications between devices, all of which are interconnected by the bus 40. The interface 38 consists of a network interface card (NIC). The interface

39 corresponds to the interface 18 of the portable terminal 10.

[0033] The printing unit 37 can handle two kinds of page description languages A and B including the emulation mode, has the printing resolution of 600 dpi, has the color and monochromatic printing modes, and accommodates the A4, A3, letter and legal paper sizes. The operating unit 35 includes a Liquid crystal display integrated with a touch screen panel for entering data.

[0034] The data transmission device 50 is a digital color copying machine and, as shown in Fig. 4, includes a control unit (CPU) 51, a read only storage unit (ROM) 52, a random access storage unit (RAM) 53, a data processing unit 54, an operating unit 55, an image reading unit 56, a printing unit 57, an interface 58 for the computer network 90, and an interface 59 for the mobile telecommunication network 70, all of which are interconnected by the bus 60. The interface 58 consists of, for example, a NIC.

[0035] The communication procedure of the data transmit-receive system will be described referring to the sequence chart shown in Fig. 5.

[0036] First, the data transmission device 50 transmits the connection request to the portable terminal 10 via the mobile telecommunication network 70. As it receives a connection request, the portable terminal 10 transmits a connection response to the data transmission device 50 via the mobile telecommunication network 70. Thus, the connection between the data transmission device 50 and the portable terminal 10 is established. The data transmission device 50 transmits a device information transmission request to the portable terminal 10 via the mobile telecommunication network 70.

[0037] As it receives the device information transmission request, the portable terminal 10 transmits a connection request to the data receiving device 30 located nearby by

means of the wireless connection between devices. As it receives the connection request, the data receiving device 30 transmits a connection response to the portable terminal 10 by means of the wireless connection between devices. Thus, the connection between the portable terminal 10 and the data receiving device 30 is established. Then, the portable terminal 10 transmits the device information transmission request to the data receiving device 30.

[0038] Next, the data receiving device 30 transmits the device information to the portable terminal 10, and then severs the connection with the portable terminal 10. On the other hand, the portable terminal 10 transmits the received device information to the data transmission device 50 via the mobile telecommunication network 70, and severs the connection with the data transmission device 50.

[0039] The data transmission device 50 transmits the connection request to the data receiving device 30 via the computer network 90 based on the device information. As it receives the connection request, the data receiving device 30 transmits the connection response to the data transmission device 50 via the computer network 90. Thus, the connection between the data transmission device 50 and the data receiving device 30 is established. The data transmission device 50 transmits the data to the data receiving device 30, and then severs the connection with the data receiving device 30.

[0040] The device information will be described below referring to Fig. 6.

[0041] The device information includes the connection information for the computer network 90 required for transmitting the data from the data transmission device 50 to the data receiving device 30 and the specification information of the output means of the data transmission device 50.

[0042] The connection information includes the

communication protocol for the computer network 90 and the identification code of the data receiving device 30, and they are the LPR (Line Printer Remote) protocol and the IP address in case of Embodiment 1-1.

[0043] As the output means of the data receiving device 30 is the printing unit 37 in case of Embodiment 1-1, the specification information includes the printing resolution, the printing mode, the control command, and the paper size. The control commands, for example, are the page description languages A and B that are usable in the data receiving device 30 and include the emulation mode.

[0044] The operating procedure of the data transmission device 50 will be described in detail referring to Fig. 7.

[0045] First, a judgment is made as to whether a transmission instruction is inputted by the user, who is using the operating unit 55 (step S10). If it is judged that the transmission instruction is inputted, a connection with the portable terminal 10 via the mobile telecommunication network 70 is established (step S11), and a device information transmission request is transmitted to the portable terminal 10 (step S12). On the other hand, if it is judged that no transmission request exists, a judgment at the step S10 will be repeated until a transmission instruction is inputted.

[0046] Then, a judgment is made whether the device information is received from the portable terminal 10 via the mobile telecommunication network 70 (step S13). If it is judged that the device information is received, the connection with the portable terminal 10 is severed (step S14). On the other hand, if it is judged that the device information has not been received, a judgment at the step S13 will be repeated until the device information is received. The device information is to be stored in the RAM 53.

[0047] Next, the specification information contained in the device information read from the RAM 53 is used at the

data processing unit 54 for preparing the data for transmission (step S15). The data for transmission can be document image data obtained by the image reading unit 56 and be stored temporarily in the RAM 53.

[0048] After that, a connection with the data receiving device 30 via the computer network 90 is established (step S16) based on the connection information contained in the device information, i.e., the LPR protocol and the IP address. The prepared data is transmitted to the data receiving device 30 (step S17). When the transmission of the prepared data is completed, the connection with the data receiving device 30 will be severed (step S18).

[0049] The operating procedure of the portable terminal 10 will be described in detail referring to Fig. 8.

[0050] First, a connection with the data transmission device 50 is established via the mobile telecommunication network 70 (step S20). Then, a judgment is made as to whether a device information transmission request is received (step S21). If it is judged that the transmission request has not been received, a judgment at the step S21 will be repeated until a transmission request is received.

[0051] If it is judged that the transmission request is received, a connection with the data receiving device 30 located nearby is established (step S22), and the transmission request is transmitted to the data receiving device 30 (step S23).

[0052] Next, a judgment is made whether the device information is received from the data receiving device 30 by means of the wireless connection between devices (step S24). If it is judged that the device information has not been received, a judgment at the step S24 will be repeated until the device information is received.

[0053] On the other hand, if it is judged that the device information is received, the connection with the data receiving device 30 will be severed (step S25). The device

information is transmitted to the data transmission device 50 via the mobile telecommunication network 70 (step S26), and the connection with the data transmission device 50 will be severed (step S27).

[0054] The operating procedure of the data receiving device 30 will be described in detail referring to Fig. 9.

[0055] First, the connection with the portable terminal 10 located nearby is established by means of the wireless connection between devices (step S30). Then, a judgment is made as to whether a device information transmission request is received (step S31). If it is judged that the transmission request has not been received, a judgment at the step S31 will be repeated until a transmission request is received.

[0056] On the other hand, if it is judged that the transmission request is received, the device information is transmitted to the portable terminal 10 by means of the wireless connection between devices (step S32), and the connection with the portable terminal 10 is then severed (step S33).

[0057] After that, a connection with the data transmission device 50 is established via the computer network 90 (step S34) and data is received from the data transmission device 50 (step S35). Next, a judgment is made whether the data reception is completed (step S36). If it is judged that the data reception has not been completed, the processes at the step S35 and the step S36 will be repeated.

[0058] On the other hand, if it is judged that the data reception has been completed, the connection with the data transmission device 50 will be severed (step S37). The received data is stored into the RAM 33. Then, output data is prepared at the data processing unit 34 using the received data, which is read from the RAM 33 (step S38). Next, the printing is executed at the printing unit 37 based on the output data (steps S39).

[0059] Thus, the data volume of the device information is small compared to the transmitted data in case of Embodiment 1-1, so that it causes little burden on the portable terminal 10 for the transmission/reception of the device information. On the other hand, data transmission from the data transmission device 50 to the data receiving device 30 is executed via the computer network 90, so that it is not restricted in any way by the function of the portable terminal 10.

[0060] While the abovementioned system provides a general applicability to data transmission and reception, it is not affected by any functional restrictions of the portable terminal and but rather realizes functions that the portable terminal cannot offer using other devices located nearby.

[0061] Moreover, although the data transmission through the computer network 90 in Embodiment 1-1 is a connection-mode transmission, it is possible to make it a connectionless-mode transmission by means of using, for example, the IP (Internet Protocol) as the protocol.

[0062] Furthermore, it is possible not to print out the output data prepared by the data processing unit 34 of the data receiving device 30 and store it temporarily in the RAM. In such a case, a criterion of whether the output data is storable is to be included as an item of the specification information of the data receiving device 30.

[Embodiment 1-2]

The data transmit-receive system shown in Fig. 10 is different from Embodiment 1-1 concerning the constitution for communicating in short distance between the portable terminal 10A and the data receiving device 30A as well as the constitution for the network between the portable terminal 10A and the data transmission device 50A.

[0063] More specifically, the portable terminal 10A and the data receiving device 30A have an interface for wired connections between devices such as the serial connection.

Moreover, the data transmission device 50A has an interface 59 for a fixed telephone network 80 (Local Switch 83), and is connected to the portable terminal 10A via the fixed telephone network 80 and the mobile telecommunication network 70.

[0064] In further details, the mobile telecommunication network 70 includes the base station 71 that communicates with the portable terminal 10 by wireless connection, the mobile switching center 72 connected with the base station 71, and a mobile Gateway Switch 73 connected with the fixed telephone network 80 via a Point Of Interface 75. The fixed telephone network 80 includes a Gateway Switch 81 connected to the mobile telecommunication network 70 via the Point Of Interface 75, a Toll Switch 82, and the Local Switch 83 connected to the data transmission device 50.

[0065] In the above transmit-receive system, the connection between the portable terminal 10A and the data receiving device 30A is a wired connection, and the fixed telephone network 80 exists between the portable terminal 10A and the data transmission device 50A, but the communication procedure and the operating procedure between the devices 10A, 30A and 50A are identical to those of Embodiment 1-1, and an effect similar to that of Embodiment 1-1 can be achieved.

[Embodiment 1-3]

Embodiment 1-3 is different from Embodiment 1-1 in that the data receiving device supports a plurality of protocols, and the protocols can be designated at the data transmission device. Specifically, the data transmission device has a means of alternatively designating a protocol. Since the operating procedures of the data receiving device and the portable terminal are identical to those in Embodiment 1-1, the descriptions are omitted.

[0066] The protocols supported by the data receiving device are TCP/IP (Transmission Control Protocol/Internet

Protocol), FTP (File Transfer Protocol), IFAX (Internet FAX), IPP (Internet Printing Protocol), LPR, Fax, and HTTP (Hyper Text Transfer Protocol).

[0067] The identification code of the TCP/IP is defined by the IP address. The identification code of the FTP is defined by the server name, directory name and password, and the data format is either the page description language A, the page description language B, or the bitmap data.

[0068] The identification code of the IFAX is defined by the e-mail address, and the data format is the TIFF-F (Tagged Image File Format-F Profile for Facsimile) compression, which is the file format for the storing and exchanging facsimile image. The identification code of the IPP is defined by the e-mail address and the data format is the TIFF-F compression. The identification code of the LPR is defined by the IP address, and the data format is either the page description language A or the page description language B.

[0069] The identification code of the FAX is defined by the facsimile (FAX) number and the data format is based on that of the facsimile. The identification code of the HTTP is defined by the server name and the directory name defined by the URL (Uniform Resource Locator) and the password, while the data format is either the JPEG (Joint Photographic Experts Group) or the TIFF (Tagged Image File Format).

[0070] The operating procedure of the data transmission device is described in detail referring to Fig. 11.

[0071] First, the device information (Fig. 12) of the data receiving device transmitted from the portable terminal is received by executing the steps S101 through S105.

[0072] Then, a judgment is made whether the data receiving device supports a plurality of protocols based on the contents of the device information (step S106). When it is judged that the data receiving device does not support a plurality of protocols, the process advances to the step S109.

[0073] On the other hand, if it is judged that the data receiving device supports a plurality of protocols, a protocol selection screen as shown in Fig. 13 is displayed on the liquid crystal display of the operating unit of the data transmission device (step S107). Next, a judgment is made whether the input of the protocol selection instruction exists (step S108). When it is judged that the protocol selection instruction is inputted, the process advances to the step S109.

[0074] In the steps S109 through S112, transmission data is prepared and transmitted to the data receiving device.

[0075] Thus, a plurality of protocols can be supported and the protocol can be selected at the data transmission device in Embodiment 1-3.

[Embodiment 1-4]

Embodiment 1-4 is different from Embodiment 1-3 in that the protocol can be designated at the portable terminal. In other words, the portable terminal, not the data transmission device, has a means of selectively designating the protocol. Since the operating procedures of the data receiving device and the data transmission device are identical to Embodiment 1-1, the descriptions will be omitted.

[0076] Referring to Fig. 14, the operating procedures of the portable terminal will be described in detail.

[0077] First, the device information (see Fig. 12) is received from the data receiving device by executing the steps S121 through S126.

[0078] Next, a judgment is made whether the data receiving device supports a plurality of protocols based on the contents of the device information (step S127). If it is judged that the data receiving device does not support a plurality of protocols, the process advances to the step S131.

[0079] On the other hand, if it is judged that the data

receiving device supports a plurality of protocols, the liquid crystal display of the operating unit of the portable terminal displays, for example, a protocol selection screen (see Fig. 13) (step S128). After that, a judgment is made whether the input of the protocol selection instruction exists (step S129). If it is judged that the protocol selection instruction is inputted, the device information will be edited (step S130), and the process advances to the step S131. Fig. 15 shows the device information after the edition when the HTTP is selected as the protocol.

[0080] The device information is transmitted to the data transmission device 50 by executing the steps S131 and S132.

[0081] Thus, the protocol can be designated at the portable terminal in case of Embodiment 1-4.

[Embodiment 1-5]

Embodiment 1-5 is different from Embodiment 1-1 in that the data receiving device supports the security function and the data transmission device has a means of inputting the password for releasing the security function. The operating procedure of the portable terminal is identical to that of Embodiment 1-1, the description is omitted. Moreover, the password format is included as a security item of the specification information, and is a character type, which, for example, consists of eight characters.

[0082] The operating procedure of the data transmission device is described in detail referring to Fig. 16.

[0083] The device information (Fig. 17) of the data receiving device is received from the portable terminal by executing the steps S141 through S145.

[0084] Next, a judgment is made based on the contents of the device information whether the data receiving device supports the security function (step S146). If it is judged that the security function is not supported, the process advances to the step S149.

[0085] On the other hand, if it is judged that the

security function is supported, a password input screen, such as shown in Fig. 18, will be displayed on the liquid crystal display of the operating unit of the data transmission device (step S147). Then, a judgment is made whether the password input exists (step S148). If it is judged that the password is inputted, the process advances to the step S149.

[0086] At the step S149, the transmission data is prepared. When the security function is supported, the input value for the password is added to the transmission data. The prepared data is transmitted to the data receiving device as the steps S150 through S152 are executed.

[0087] The operating procedure of the data receiving device will be described in detail referring to Fig. 19.

[0088] First, by executing the steps S161 through S168, the reception of data from the data transmission device is completed.

[0089] Next, the password is detected from the data (step S169). Then, a judgment is made whether the detected password is true (step S170). If it is judged that the password is true, the output data is prepared (step S171) and outputted (step S172). On the other hand, if the password is judged to be false, the process terminates.

[0090] Thus, in Embodiment 1-5, the data transmission device can accommodate for a case wherein the data receiving device supports the security function.

[Embodiment 1-6]

Embodiment 1-6 is different from Embodiment 1-5 in that the portable terminal has a means for inputting the password that releases the security function. The operating procedure of the data receiving device is the same as that of Embodiment 1-5, and the operating procedure of its data transmission device is the same as that of Embodiment 1-1, so that their descriptions are omitted here.

[0091] The operating procedure of the portable terminal will be described in detail referring to Fig. 20.

[0092] First, by executing the steps S181 through S186, the device information (see Fig. 17) is received from the data transmission device.

[0093] Next, a judgment is made based on the contents of the device information whether the data receiving device supports the security function (step S187). If it is judged that the security function is not supported, the process advances to the step S191.

[0094] On the other hand, if it is judged that the security function is supported, the password input screen, such as shown in Fig. 21, will be displayed on the liquid crystal display of the operating unit of the portable terminal (step S188). Next, a judgment is made whether the password input exists (step S189). If it is judged that the password is inputted using the keyboard of the operating unit, the device information is edited, the password input value is added (step S190), and the process advances to the step S191.

[0095] After that, the device information is transmitted to the data transmission device as the steps S191 and S192 are executed.

[0096] Thus, in Embodiment 1-6, the portable terminal can accommodate for a case wherein the data receiving device supports the security function.

[Embodiment 1-7]

Embodiment 1-7 is different from the Embodiment 1-1 through Embodiment 1-6 in that it has a means for canceling the data transmission. More specifically, in canceling the data transmission, the portable terminal transmits a second device information to the data transmission device, while the data transmission device stops the data transmission based on the second device information. The second device information contains the transmission disapproval instruction, which is a data for canceling the transmission. The device information of the data receiving device is referred to as the first

device information. The operating procedure of the data receiving device is similar to that of Embodiment 1-1, so that its description is omitted here.

[0097] The operating procedure of the data transmission device will be described in detail referring to Fig. 22.

[0098] First, by executing the steps S201 through S205, the device information is received from the portable terminal. Next, a judgment is made whether a transmission disapproval instruction is included in the device information (step S206).

[0099] If it is judged that the transmission disapproval instruction exists, i.e., it is judged that the second device information is received, the transmission instruction is cancelled and the process is terminated. On the other hand, if it is judged that the transmission disapproval instruction does not exist, i.e., it is judged that the first device information is received, the data for transmission is prepared by executing the steps S207 through S210 and the data is transmitted to the data receiving device.

[0100] The operating procedure of the portable terminal will be described in detail referring to Fig. 23.

[0101] First, a connection with the data transmission device is established (step S221). Next, a judgment is made whether a transmission request for the first device information is received (step S222). When it is judged that the transmission request is received, a transmission selection screen such as shown in Fig. 24 is displayed on the liquid crystal display of the operating unit of the portable terminal prompting an input of decision whether to transmit the data or not (step S223). After that, a judgment is made whether there is a transmission disapproval instruction (step S224).

[0102] When the transmission disapproval instruction is inputted, the second device information containing the transmission disapproval instruction is prepared to be

transmitted without connecting with the data receiving device (step S225), and the connection with the data transmission device is severed (step S231).

[0103] On the other hand, when the transmission approval instruction is inputted, the first device information is obtained from the data receiving device, the first device information is transmitted to the data transmission device, and the connection is severed as the steps S226 through S231 are executed.

[0104] Thus, the data volume of the second device information is small, and it causes little burden on the portable terminal for transmission/reception of the device information. Therefore, it is possible to cancel the data transmission without being restricted by the function of the portable terminal.

[Embodiment 1-8]

Embodiment 1-8 is different from the Embodiment 1-1 through Embodiment 1-7 in that it has a means of holding the data transmission using a third device information. The third device information is device information of the data transmission device required for the portable terminal to establish a connection with the data transmission device via the mobile telecommunication network and contains, for example, connection information consisting of telephone number and storage information consisting of identification number of a file to be transmitted. The operating procedure of the data receiving device is identical to that of Embodiment 1-1 so that the description is omitted.

[0105] The communication procedure of the data transmit-receive system will be described referring to the sequence chart of Fig. 25.

[0106] First, the data transmission device transmits a connection request to the portable terminal. As it receives the connection request, the portable terminal transmits a connection response to the data transmission device. This

establishes the connection between the data transmission device and the portable terminal. Next, the data transmission device transmits the transmission request for the first device information to the portable terminal.

[0107] Upon receiving the transmission request for the first device information, the portable terminal transmits a hold request to the data transmission device. Then, the data transmission device transmits the third device information to the portable terminal and severs the connection.

[0108] The portable terminal transmits the connection request to the data transmission device based on the third device information before the data transmission. Upon receiving the connection request, the data transmission device transmits a connection response to the portable terminal. Thus, the connection between the portable terminal and the data transmission device is established. The portable terminal transmits the data transmission start request to the data transmission device. The data transmission device then transmits the transmission request for the first device information to the portable terminal.

[0109] Upon receiving the transmission request for the first device information, the portable terminal executes the process similar as in Embodiment 1-1, and the data transmission device finally transmits the data to the data receiving device.

[0110] The operating procedure of the data transmission device will be described in detail referring to Fig. 26.

[0111] First, a judgment is made as to whether a transmission instruction is inputted (step S241). If it is judged that the transmission instruction is inputted, a connection with the portable terminal is established (step S242), and a transmission request for the first device information is transmitted to the portable terminal (step S243).

[0112] Next, a judgment is made as to whether the first

device information is received from the portable terminal (step S244). If it is judged that the first device information is received, the steps S244 through S249 are executed for transmitting data to the data receiving device.

[0113] On the other hand, if it is judged that the first device information has not been received, a judgment is further made as to whether the hold request is received (step S250). If it is judged that the hold request has not been received, the process returns to the step S244. If it is judged that the hold request has been received, the third device information is transmitted to the portable terminal (step S251), and the connection with the portable terminal is severed (step S252).

[0114] After that, a connection with the portable terminal is established based on the third device information (step S253). Next, a judgment is made as to whether the start request is received (step S254). When the start request is received, the process returns to the step S243, and data is transmitted from the data transmission device to the data receiving device as the steps S243 through S249 are executed.

[0115] The operating procedure of the portable terminal will be described in detail referring to Fig. 27.

[0116] First, a connection with the data transmission device is established (step S261), and a judgment is made whether a transmission request for the first device information is received (step S262). When it is judged that the transmission request is received, a transmission hold selection screen such as shown in Fig. 28 is displayed on the liquid crystal display of the operating unit of the portable terminal and then a judgment is made whether a hold instruction is inputted (step S263). If it is judged that the hold instruction is not requested, the steps S264 through S269 are executed for transmitting the first device information to the data transmission device.

[0117] On the other hand, if it is judged that the hold

instruction has been inputted, the hold request is transmitted to the data transmission device (step S270). Next, a judgment is made as to whether the third device information is received (step S271). If it is judged that the third device information is received, the connection with the data transmission device will be severed (step S272), and the received third device information will be stored into the RAM (step S273).

[0118] After that, a transmission start selection screen as shown in Fig. 29 is displayed on the crystal liquid display of the operating unit of the portable terminal, and a judgment is made as to whether the start instruction is inputted (step S274). In an actual case, a copying machine, image scanner, facsimile, etc., will be displayed as the data transmission device on the transmission start selection screen.

[0119] If it is judged that a start instruction is inputted, a connection with the data transmission device is established using the third device information stored in the RAM (step S275), and a start request is transmitted to the data transmission device (step S276). Next, the process returns to the step S262, and the steps S262 through S269 are executed for transmitting the first device information to the data transmission device.

[0120] Thus, the data volume of the third device information is small, and it causes little burden on the portable terminal for transmission/reception of the device information. Therefore, it is possible to hold the data transmission without being restricted by the function of the portable terminal.

[Embodiment 1-9]

The data transmit-receive system according to Embodiment 1-9 is different from Embodiment 1-1 in that it includes a plurality of data receiving devices 30B, 30C and 30D, wherein the data transmission device 50 has a means of

automatically selecting one of the data receiving devices 30B, 30C and 30D as a destination device, as shown in Fig. 30. The operating procedure of the data receiving device is identical to that of Embodiment 1-1, so that its description is omitted.

[0121] The communication procedure of the data transmit-receive system will be described referring to the sequence chart shown in Fig. 31.

[0122] First, the data transmission device 50 transmits a connection request to the portable terminal 10. Upon receiving the connection request, the portable terminal 10 transmits a connection response to the data transmission device 50. Thus, the connection between the data transmission device 50 and the portable terminal 10 is established. The data transmission device 50 transmits a device information transmission request to the portable terminal 10.

[0123] Upon receiving the device information transmission request, the portable terminal 10 transmits a connection request to the data receiving devices 30B, 30C and 30D located nearby. Upon receiving the connection request, the data receiving devices 30B, 30C and 30D transmit connection responses, respectively.

[0124] Next, the portable terminal 10 transmits the device information transmission request to the data receiving devices 30B, 30C and 30D, and obtains, for example, three kinds of device information as shown in Fig. 32. On the other hand, the data receiving devices 30B, 30C and 30D sever their connections with the portable terminal 10 after transmitting the device information.

[0125] The portable terminal 10 edits the plurality of device information as received, prepares combined device information as shown in Fig. 33, transmits the device information to the data transmission device 50, and severs the connection with the data transmission device 50.

[0126] The data transmission device 50 compares the data contained in the device information, automatically selects one of the data receiving devices 30B, 30C and 30D as the destination device, and transmits a connection request to the selected destination device. Upon receiving the connection request, the destination device transmits a connection response to the data transmission device 50. This establishes a connection between the data transmission device 50 and the destination device. The data transmission device 50 transmits data to the destination device and then severs the connection with the destination device.

[0127] The operating procedure of the data transmission device 50 will be described in detail referring to Fig. 34.

[0128] First, by executing the steps S301 through S305, the device information (see Fig. 33) is received from the portable terminal 10.

[0129] Next, the data of the data receiving devices 30B, 30C and 30D contained in the device information are compared and a proper destination device is selected (step S306). Then, transmission data is prepared using the specification information of the destination device (step S307), and a connection is established based on the connection information of the destination device (step S308). Next, the prepared data is transmitted and the connection with the destination device will be severed (step S309).

[0130] The operating procedure of the portable terminal 10 will be described in detail referring to Fig. 35.

[0131] First, a connection with the data transmission device 50 is established and the transmission request is received (step S311). Next, a connection request is transmitted to the data receiving devices 30B, 30C and 30D (step S312), and a judgment is made whether a connection response is received (step S313). If it is judged that no connection response exists, the process proceeds to the step S317.

[0132] On the other hand, if it is judged that there is a connection response, a transmission request is transmitted (step S314). After that, a judgment is made as to whether any device information is received (step S315). If it is judged that device information is received, the connection with the data receiving device is severed (step S316), and the process advances to the step S317.

[0133] At the step S317, a judgment is made whether the next data receiving device exists, or whether there is any data receiving device of the device information which has not been received.

[0134] By repeating the steps S313 through S317, the device information (Fig. 32) of the data receiving devices 30B, 30C and 30D can be obtained. Next, the device information of the data receiving devices 30B, 30C and 30D is edited and combined to form single device information (step S318). The combined device information (see Fig. 33) is transmitted to the data transmission device 50, and the connection with the data transmission device 50 is severed (step S322).

[0135] Thus, the data transmission device 50 can automatically select one of the data receiving devices 30B, 30C and 30D as the destination device without being restricted by the function of the portable terminal.

[0136] Moreover, the portable terminal 10 is not notified about the destination device selected at the data transmission device 50. However, it is possible to notify the portable terminal 10 about the destination device by the data transmission device 50 via the mobile telecommunication network, or cause the destination device to notify the portable terminal 10.

[Embodiment 1-10]

Embodiment 1-10 is different from Embodiment 1-9 in that the data transmission device provides a means for the user to select the destination device manually. The

operating procedures of the portable terminal and the data receiving device are identical to those of Embodiment 1-9, so that their descriptions are omitted.

[0137] The operating procedure of the data transmission device will be described in detail referring to Fig. 36.

[0138] First, by executing the steps S351 through S355, the device information (see Fig. 33) is received from the portable terminal.

[0139] Next, the data receiving device selection screen as shown in Fig. 37, for example, is generated based on data of the each data receiving device contained in the device information, and is displayed (step S356). If a data receiving device that has device information inappropriate for the data transmission device, the data receiving device will not be displayed on the data receiving device selection screen.

[0140] Then, a judgment is made whether there is any selection input (instruction for the destination device) made by the user (step S357). If it is judged that the selection is completed, the transmission data is prepared using the specification information of the selected destination device (step S358).

[0141] After that, the connection with the destination device is established based on the connection information of the selected destination device (step S359), the prepared data is transmitted, and then the connection with the destination device is severed (step S360).

[0142] Thus, the user can select manually at the data transmission device one of the data receiving devices as the destination device.

[Embodiment 1-11]

Embodiment 1-11 is different from Embodiment 1-9 in that the portable terminal provides a means for the user to select the destination device manually. The operating procedures of the data transmission device is identical to

that of Embodiment 1-1 and the operating procedure of the data receiving device is identical to that of Embodiment 1-9, so that their descriptions are omitted.

[0143] The operating procedure of the portable terminal will be described in detail referring to Fig. 38.

[0144] First, by executing the steps S361 through S367, the device information (see item (A) through (C) of Fig. 32) is received from the data receiving device. Next, the data receiving device selection screen (see Fig. 37), for example, is generated based on the device information, and is displayed (step S368).

[0145] After that, a judgment is made whether there is any selection input made by the user (step S369). If it is judged, for example, that data receiving device 30B is selected, the device information shown in item (A) of Fig. 32 is transmitted to the data transmission device, and then the connection with the data transmission device will be severed (step S370).

[0146] Thus, the user can select manually at the portable terminal one of the data receiving devices as the destination device.

[Embodiment 2-1]

Embodiment 2-1 is different from Embodiment 1-1 in that a fourth device information is transmitted to the data receiving device using the portable terminal from the data transmission device and the data receiving device establishes a connection with the data transmission device based on the fourth device information. The fourth device information is the device information of the data transmission device required for establishing a connection with the data transmission device via the computer network, and contains, for example, an identification code such as the IP address, a communication protocol, a storage information consisting of identification number of a file to be transmitted.

[0147] The communication procedure of the data transmit-

receive system will be described referring to the sequence chart shown in Fig. 39.

[0148] First, the data transmission device transmits a connection request to the portable terminal. The portable terminal transmits a connection response to the data transmission device. Thus, a connection is established between the data transmission device and the portable terminal. The data transmission device transmits the fourth device information to the portable terminal, and then severs the connection with the portable terminal.

[0149] Upon receiving the fourth device information of the data transmission device, the portable terminal transmits a connection request to the data receiving device located nearby. Upon receiving the connection request, the data receiving device transmits a connection response to the portable terminal. Thus, the connection between the portable terminal and the data receiving device is established. The portable terminal transmits the fourth device information to the data receiving device, and then severs the connection with the data receiving device.

[0150] Next, the data receiving device transmits a connection request to the data transmission device based on the fourth device information. Upon receiving the connection request, the data transmission device transmits a connection response to the data receiving device. Thus, the connection between the data receiving device and the data transmission device is established. The data receiving device transmits the data transmission request and the first device information (own device information) to the data transmission device.

[0151] Upon receiving the data transmission request and the first device information, the data transmission device transmits the requested data to the data receiving device based on the first device information, and then severs the connection with the data receiving device.

[0152] The operating procedure of the data transmission device is described in detail referring to Fig. 40.

[0153] First, a judgment is made whether there is any transmission instruction input by the user using the operating unit (step S401). If it is judged that there is a transmission instruction input, a connection with the portable terminal is established (step S402). The fourth device information of the data transmission device is transmitted to the portable terminal (step S403), and the connection with the portable terminal is severed (step S404).

[0154] Next, a connection with the data receiving device is established based on the fourth device information (step S405). A judgment is made as to whether the data transmission request and the first device information are received (step S406). If it is judged that the reception is completed, transmission data is prepared using the specification information contained in the first device information (step S407) and transmitted to the data receiving device based on the connection information contained in the first device information (step S408), and the connection with the data receiving device is severed (step S409).

[0155] The operating procedure of the portable terminal will be described in detail referring to Fig. 41.

[0156] First, a connection with the data transmission device is established (step S411), and a judgment is made as to whether the fourth device information is received (step S412). If it is judged that the fourth device information is received, the connection with the data transmission device is severed (step S413).

[0157] Next, a connection with the data receiving device is established (step S414), the fourth device information is transmitted to the data receiving device (step S415), and the connection with the data transmission device is severed (step S416).

[0158] The operating procedure of the data receiving

device will be described in detail referring to Fig. 42.

[0159] First, a connection with the portable terminal is established (step S421), a judgment as to whether the fourth device information is received (step S422). If it is judged that the fourth device information is received, the connection with the portable terminal is severed (step S423).

[0160] Next, a connection with the data transmission device is established using the fourth device information (step S424), while the data transmission request and the first device information (own device information) are transmitted (step S425). Thereafter the data from the data transmission device is received (step S426). Next, a judgment is made as to whether the data transmission is completed (step S427). If it is judged that the data transmission is completed, a connection with the data transmission device will be severed (step S428).

[0161] Then, the output data is prepared using the received data, and the obtained data is outputted (step S429).

[0162] Thus, the data volume of the device information is small compared to the data being transmitted in the data transmit-receive system according to Embodiment 2-1, and it causes little burden on the portable terminal for transmission/reception of the device information. On the other hand, the data transmission from the data transmission device to the data receiving device can be executed through the computer network without being restricted by the function of the portable terminal.

[Embodiment 2-2]

Embodiment 2-2 is different from Embodiment 2-1 in that it has a means of causing the data transmission to hold using the third device information (refer to Embodiment 1-8). More specifically, in causing the data transmission to hold, the portable terminal severs the connection with the data transmission device after obtaining the third device

information while establishing a connection with the data transmission device based on the third device information when starting the data transmission. Since the operating procedure for the data receiving device is identical to Embodiment 2-1, its description is omitted here.

[0163] The operating procedure of the data transmission device will be described in detail referring to Fig. 43.

[0164] First, the steps S441 through S443 are executed for transmitting a transmission request to the portable terminal.

[0165] Next, a judgment is made as to whether a hold request is received (step S444). If it is judged that the hold request has not been received, the steps S445 through S450 are executed, and the data is transmitted from the data transmission device to the data receiving device. If it is judged that the hold request is received, the third device information is transmitted to the portable terminal (step S451), and the connection with the portable terminal will be severed (step S452).

[0166] Thereafter a connection with the portable terminal is established using the third device information (step S453). Next, a judgment is made as to whether a start request exists (step S454). If it is judged that a start request is received, the process returns to the step S445, and the steps S445 through S350 are executed for transmitting the data from the data transmission device to the data receiving device.

[0167] The operating procedure of the portable terminal will be described in detail referring to Fig. 44.

[0168] First, a connection with the data transmission device (step S461), a judgment is made as to whether a transmission request exists (step S462). If it is judged that the transmission request is received, a transmission hold selection screen (refer to Fig. 28) is displayed on the liquid crystal display of the operating unit of the portable terminal, and then, a judgment is made as to whether a hold

instruction input exists (step S463). If it is judged that no hold instruction input exits, the steps S464 through S468 are executed, and the fourth device information is transmitted to the data receiving device.

[0169] If it is judged that the hold instruction is inputted, a hold request is transmitted to the data transmission device (step S469). Next, a judgment is made as to whether the third device information is received (step S470). If it is judged that it is received, the connection with the data transmission device will be severed (step S471). The received third device information is stored in the RAM (step S472).

[0170] Thereafter, a transmission start selection screen (refer to Fig. 29) is displayed on the liquid crystal display of the operating unit of the portable terminal, and a judgment is made as to whether a start instruction input exists (step S473). If it is judged that the start instruction is inputted, a connection with the data transmission device is established using the third device information stored in the RAM (step S474). Next, a start request is transmitted to the data transmission device (step S475). The process returns to the step S464, and the steps S464 through S468 are executed for transmitting the fourth device information to the data receiving device.

[0171] Thus, by using the third device information whose data volume is small, it is possible to hold the data transmission without having any restrictions from the function of the portable terminal.

[Embodiment 3-1]

The data transmit-receive system according to Embodiment 3-1 is different from Embodiment 1-1 in that the device information of the data receiving device 30 is transmitted to the data transmission device 50B using a plurality of portable terminals 10, 10B as shown in Fig. 45.

[0172] The portable terminal (the second portable

terminal) 10B is similarly constituted as the portable terminal (the first portable terminal) 10 and has a communication means for communicating via the mobile telecommunication network 70 and a local communication means for communicating in short distances. The data transmission device 50B is different from the data transmission device 50 related to Embodiment 1-1 in that it has a local communication means for communicating with the second portable terminal 10B in short distances. The operating procedure of the data receiving device is identical to that of Embodiment 1-1, its description is omitted.

[0173] The communication procedure of the data transmit-receive system will be described in detail referring to the sequence chart shown in Fig. 46.

[0174] First, as a transmission instruction is inputted, the second portable terminal 10B transmits a connection request to the first portable terminal 10 via the mobile telecommunication network 70. The first portable terminal 10 transmits a connection response to the second portable terminal 10B after receiving the connection request. Thus, the connection between the second portable terminal 10B and the first portable terminal 10 is established. The second portable terminal 10B transmits the device information transmission request to the first portable terminal 10.

[0175] Upon receiving the device information transmission request, the first portable terminal 10 transmits a connection request to the data receiving device 30 located nearby. Upon receiving the connection request, the data receiving device 30 transmits the connection response to the first portable terminal 10. Thus, the connection between the first portable terminal 10 and the data receiving device 30 is established. The first portable terminal 10 transmits a device information transmission request to the data receiving device 30.

[0176] Next, the data receiving device 30 transmits the

device information to the first portable terminal 10, and then severs the connection with the first portable terminal 10. On the other hand, the first portable terminal 10 transmits the received device information to the second portable terminal 10B via the mobile telecommunication network 70, and then severs the connection with the second portable terminal 10B.

[0177] Upon receiving the device information, the second portable terminal 10B transmits a connection request to the data transmission device 50B located nearby. Upon receiving the connection request, the data transmission device 50B transmits the connection response to the second portable terminal 10B. Thus, the connection between the second portable terminal 10B and the data transmission device 50B is established. The second portable terminal 10B transmits the device information to the data transmission device 50B.

[0178] Next, the data transmission device 50B transmits a connection request to the data receiving device 30 via the computer network 90 based on the device information. Upon receiving the connection request, the data receiving device 30 transmits a connection response to the data transmission device 50B via the computer network 90. Thus, the connection between the data transmission device 50B and the data receiving device 30 is established. The data transmission device 50B transmits the data to the data receiving device 30, and then severs the connection with the data receiving device 30.

[0179] The operating procedure of the second portable terminal 10B will be described in detail referring to Fig. 47.

[0180] First, a judgment is made as to whether a transmission instruction is inputted by the user (step S501). If it is judged that the transmission instruction input exists, a connection with the first portable terminal 10 is established via the mobile telecommunication network 70 (step

S502), a device information transmission request is transmitted to the first portable terminal 10 (step S503).

[0181] Next, a judgment is made whether the device information is received from the first portable terminal 10 via the mobile telecommunication network 70 (step S504). If it is judged that the device information is received, the connection with the first portable terminal 10 will be severed (step S505).

[0182] The connection is then established with the data transmission device 50B located nearby (step S506). The device information is transmitted to the data transmission device 50B (step S507), and the connection with the data transmission device 50B is severed (step S508).

[0183] The operating procedure of the data transmission device 50B will be described in detail referring to Fig. 48.

[0184] First, a judgment is made as to whether there is any connection request from the second portable terminal 10B exists (step S511). If it is judged that a connection request is received, a connection response is transmitted to the second portable terminal 10B (step S512). Thus, the connection between the data transmission device 50B and the second portable terminal 10B is established.

[0185] Next, a judgment is made as to whether the device information is received (step S513). If it is judged that the device information is received, the connection with the second portable terminal 10B is severed (step S514).

[0186] Then, the steps S515 through S518 are executed for transmitting the prepared data to the data receiving device 30.

[0187] The operating procedure of the first portable terminal 10 will be described in detail referring to Fig. 49.

[0188] First, the connection with the second portable terminal 10B is established via the mobile telecommunication network 70 (step S521). A judgment is made as to whether any device information transmission request is received (step

S522).

[0189] If it is judged that the transmission request is received, the connection with the data receiving device 30 located nearby is established (step S523), and a device information transmission request is transmitted to data receiving device 30 (step S524).

[0190] Then, a judgment is made as to whether any device information has been received from the data receiving device 30 (step S525). If it is judged that the device information is received, the connection with the data receiving device 30 will be severed (step S526).

[0191] Next, the device information is transmitted to the second portable terminal 10B via the mobile telecommunication network 70 (step S527), and the connection with the second portable terminal 10B is severed (step S528).

[0192] Thus, in Embodiment 3-1, a more flexible system can be constituted as a plurality of portable terminals is used.

[Embodiment 3-2]

Embodiment 3-2 is different from Embodiment 3-1 in that, as shown in Fig. 50, the data transmit-receive system includes a plurality of data transmission devices 50B, 50C and 50D and that the second portable terminal 10B has a means of selecting one of the data transmission devices 50B, 50C and 50D as a source device using a fifth device information and a sixth device information. The data transmission devices 50C and 50D has a local communication means for communicating with the second portable terminal 10B in short distances as the data transmission device 50B.

[0193] The fifth device information contains the connection information that can be used on the data transmission devices 50B, 50C and 50D and the specification information of the output means of the data transmission device 50, and corresponds to the first device information. The sixth device information is the identification data required for the second portable terminal 10B to establish

connections with the data transmission devices 50B, 50C and 50D, respectively. Since the operating procedures of the first portable terminal 10 and the data receiving device 30 are similar to those of Embodiment 3-1, their descriptions are omitted here.

[0194] The communication procedure of the data transmit-receive system will be described here referring to the sequence chart shown in Fig. 51.

[0195] First, similar to Embodiment 3-1, the second portable terminal 10B receives the first device information of the data receiving device 30 via the first portable terminal 10.

[0196] Next, the second portable terminal 10B transmits connection requests to the data transmission devices 50B, 50C and 50D. Each of the data transmission devices 50B, 50C and 50D transmits a connection response as well as the fifth device information and the sixth device information to the second portable terminal 10B, and severs the connection with the second portable terminal 10B.

[0197] The second portable terminal 10B compares the first device information and the fifth device information and selects one of the data transmission devices 50B, 50C and 50D as a source device. Thereafter, the second portable terminal 10B establishes the connection with the source device based on the sixth device information of the source device, and transmits the first device information to the source device.

[0198] Next, the source device transmits the data to the data receiving device 30 based on the first device information similar to Embodiment 3-1.

[0199] The operating procedure of the second portable terminal 10B will be described in detail referring to Fig. 52.

[0200] First, the steps S601 through S604 are executed for receiving the first device information from the first portable terminal 10.

[0201] Next, connection requests are transmitted to the data transmission devices 50B, 50C and 50D (step S605), and a judgment is made as to whether any connection response is received (step S606). If it is judged that a connection response is received, a transmission request for the fifth device information and the sixth device information is transmitted (step S607). Then, a judgment is made whether the fifth device information and the sixth device information are received (step S608). If it is judged that the fifth device information and the sixth device information are received, the fifth device information and sixth device information will be stored into the RAM (step S609), and the connection will be severed (step S610).

[0202] When the storage of the fifth device information and the sixth device information of the data transmission devices 50B, 50C and 50D is completed by repeating the steps S606 through S610, the first device information and the fifth device information are compared, and one of the data transmission devices 50B, 50C and 50D is automatically selected as the source device (step S611). Next, the data transmission device instruction screen is displayed on the liquid crystal display of the second portable terminal (step S612).

[0203] For example, if the data transmission devices 50B, 50C and 50D have the fifth device information shown in item (A)-(C) of Fig. 53 respectively, and the data receiving device 30 has the first device information shown in item (D) of Fig. 53, the data transmission device 50B has the fifth device information that corresponds to the first device information of the data receiving device 30, the data transmission device 50B will be automatically selected and, for example, the data transmission device instruction screen shown in Fig. 54 will be displayed.

[0204] Next, the connection with the selected source device is established based on the sixth device information

of the source device (step S613), and the first device information is transmitted (step S614). Then, the connection is severed (step S615).

[0205] The operating procedures of the data transmission devices 50B, 50C and 50D will be described in detail referring to Fig. 55.

[0206] First, a judgment is made as to whether a connection request is received from the second portable terminal 10B (step S621). If it is judged that the connection request is received, a connection response is transmitted to the second portable terminal 10B (step S622). Thus, the connection between the data transmission device 50B and the second portable terminal 10B is established.

[0207] Next, a judgment is made as to whether a transmission request is received (step S623). If it is judged that the transmission request is received, the fifth device information and the sixth device information are transmitted to the second portable terminal 10B (step S624), and the connection with the second portable terminal 10B will be severed (step S625).

[0208] Thereafter, a judgment is made as to whether a connection request to be transmitted from the second portable terminal 10B based on the sixth device information exists (step S626). Next, the first device information is obtained from the second portable terminal 10B by executing the steps S627 through S629, and the data prepared is transmitted to the data receiving device 30 by executing the steps S630 through S633.

[0209] Thus, the data volume of the fifth device information and the sixth device information is small, and it causes little burden on the portable terminal for transmission/reception of the device information. Therefore, one of the data transmission devices can be automatically selected as the source device at the second portable terminal without being restricted by the function of the portable

terminal.

[Embodiment 3-3]

Embodiment 3-3 is different from Embodiment 3-2 in that the second portable terminal provides a means for the user to select the source device manually. Since the operating procedures of the first portable terminal, the data transmission device and the data receiving device are identical to those of Embodiment 3-2, their descriptions are omitted.

[0210] The operating procedure of the second portable terminal 10B will be described in detail referring to Fig. 56.

[0211] First, the steps S641 through S650 are executed for receiving the first device information, the fifth device information and the sixth device information.

[0212] Next, the data transmission device selection screen shown in Fig. 57 is, for example, generated and displayed on the liquid crystal display of the second portable terminal based on the fifth device information (step S651). If an unsuitable data transmission device is found as a result of the comparison of the first device information and the fifth device information, the unsuitable data transmission device will not be displayed on the data transmission device selection screen.

[0213] Next, a judgment is made as to whether the user's selection input exists (step S652). If it is judged that the selection is completed, a connection with the selected source device is established based on the sixth device information of the selected source device (step S653), and the first device information is transmitted (step S654). Then the connection is severed (step S655).

[0214] Thus, in Embodiment 3-3, one of the data transmission devices can be selected manually at the second portable terminal as the source device.

[Embodiment 3-4]

Embodiment 3-4 is different from Embodiment 3-1 in that, as shown in Fig. 58, the data transmit-receive system includes a plurality of data receiving devices 30B, 30C and 30D and that the data transmission device 50B has a means of automatically selecting one of the data receiving devices 30B, 30C and 30D as a destination device. Since the operating procedure of the second portable terminal 10B is identical to that of Embodiment 3-1 and the operating procedures of the first portable terminal 10 and the data receiving devices 30B, 30C and 30D are identical to those of Embodiment 1-9, their descriptions are omitted here.

[0215] The operating procedure of the data transmission device 50B will be described in detail referring to Fig. 59.

[0216] First, the steps S661 through S655 are executed to receive the first device information (refer to Fig. 33) generated by combining the first device information of the data receiving devices 30B, 30C and 30D (refer to item (A) through (C) of Fig. 32).

[0217] Next, the data of the data receiving devices 30B, 30C and 30D contained in the first device information are compared and a proper destination device is selected (step S666). Then, transmission data is prepared using the specification information of the destination device (step S667), and a connection is established based on the connection information of the destination device (step S668). Next, the prepared data is transmitted and the connection with the destination device will be severed (step S669).

[0218] Thus, in Embodiment 3-4, the data receiving device can automatically selects one of the data receiving devices as the destination device without being restricted by the function of the portable terminal in the same way as in Embodiment 1-9.

[Embodiment 3-5]

Embodiment 3-5 is different from Embodiment 3-4 in that the second portable terminal provides a means for the

user to select the destination device manually. The operating procedures of the data transmission device 50B is identical to that of Embodiment 3-1 and the operating procedures of the first portable terminal 10 and the data receiving devices 30B, 30c and 30D are identical to that of Embodiment 3-4, so that their descriptions are omitted.

[0219] The operating procedure of the second portable terminal will be described in detail referring to Fig. 60.

[0220] First, the steps S671 through S674 are executed to receive the first device information (refer to Fig. 33) generated by combining the first device information of the data receiving devices 30B, 30C and 30D (refer to item (A) through (C) of Fig. 32). Next, the data receiving device selection screen (refer to Fig. 37) is generated based on the first device information and displayed (step S675).

[0221] Then, a judgment is made whether the user's selection input exists (step S676). If it is judged that the selection is completed, a connection with the data transmission device is established (step S677). Next, the first device information of the selected destination device is transmitted to the data transmission device (step S678). Then, the connection with the data transmission device is severed (step S679).

[0222] Thus, in Embodiment 3-5, one of the data receiving devices can be selected manually at the second portable terminal as the destination device.

[Embodiment 4-1]

The data transmit-receive system shown in Fig. 61 is different from that of Embodiment 3-1 in that the data transmitted via the computer network 90 is encoded voice data and that the first device 30E and the second device 50E have codec means for coding/decoding the voice data. In other words, the first portable terminal 10 and the second portable terminal 10B execute voice communication via the computer network 90 in the data transmit-receive system according to

Embodiment 4-1.

[0223] More specifically, the first device 30E performs encoding of voice data transmitted from the first portable terminal 10 via the local communication means in order to transmit it to the second device 50E via the computer network 90, as well as decoding of encoded data received from the second device 50E via the computer network 90 into voice data in order to transmit it to the first portable terminal 10 using the local communication means.

[0224] On the other hand, the second device 50E performs encoding of voice data transmitted from the second portable terminal 10B via the local communication means in order to transmit it to the first device 30E via the computer network 90, as well as decoding of encoded data received from the first device 30E via the computer network 90 into voice data in order to transmit it to the second portable terminal 10B using the local communication means.

[0225] The communication procedure of the data transmit-receive system will be described referring to the sequence chart of Fig. 62.

[0226] First, when the second portable terminal 10B receives a transmission instruction, the connection is established between the first device 30E and the second device 50E via the computer network 90 similar to Embodiment 3-1. Then, the first device 30E and the second device 50E transmit connection establishment notices to the first portable terminal 10 and the second portable terminal 10B, respectively.

[0227] Next, upon receiving the connection establishment notice from the second device 50E, the second portable terminal 10B transmits the voice data inputted by the user to the second device 50E. The second device 50E encodes voice data from the second portable terminal 10B and transmits it to the first device 30E via the computer network 90.

[0228] The first device 30E decodes encoded data from the

second device 50E into voice data and transmits it to the first portable terminal 10 and, then, the voice is reproduced at the first portable terminal 10.

[0229] On the other hand, the first portable terminal 10 transmits the voice data inputted by the user to the first device 30E. The first device 30E encodes voice data from the first portable terminal 10 and transmits it to the second device 50E via the computer network 90.

[0230] The second device 50E decodes encoded data from the first device 30E into voice data and transmits it to the second portable terminal 10B and, then the voice is reproduced at the second portable terminal 10B.

[0231] The operating procedure of the second device 50E will be described in detail referring to Fig. 63.

[0232] First, the steps S701 and S702 are executed for receiving the device information of the first device 30E from the second portable terminal 10B. The device information of the first device 30E contains only the connection information as shown in Fig. 64.

[0233] Next, when the connection with the first device 30E is established based on the connection information (step S703), a connection establishment notice is transmitted to the second portable terminal 10B (step S704). Thereafter, a judgment is made as to whether voice data is received from the second portable terminal 10B (step S705).

[0234] If it is judged that voice data is received, the voice data is encoded (step S706) and transmitted to the first device 30E (step S707), while the process advances to the step S711. On the other hand, if it is judged that voice data is not received, a judgment is further made as to whether encoded data is received from the first device 30E (step S708). If it is judged that encoded data is received, the encoded data is decoded (step S709) and is transmitted to the second portable terminal 10B as voice data (step S710), while the process advances to the step S711. In addition, if

it is judged that the encoded data is not received, the process advances to the step S711.

[0235] At the step S711, a judgment is made as to whether the voice communication is completed. If it is judged that the voice communication is not completed, the process returns to the step S705. On the other hand, if it is judged that the voice communication is completed, the connection with the first device 30E will be severed (step S712).

[0236] The operating procedure of the second portable terminal 10B will be described in detail referring to Fig. 65.

[0237] First, the steps S721 through S724 are executed for transmitting the device information of the first device 30E obtained from the first portable terminal 10 to the second device 50E.

[0238] Next, a judgment is made as to whether the connection establishment notice from the second device 50E is received (step S725). When the receipt of the connection establishment notice is confirmed, a judgment is made as to whether voice data is received from the microphone of the voice input/output unit (step S726).

[0239] If it is judged that voice is inputted, the voice is converted into voice data (step S727) and transmitted to the second device 50E (step S728), while the process advances to the step S731. On the other hand, if it is judged that voice is not inputted, a judgment is further made as to whether voice data is received from the second device 50E (step S729). If it is judged that the voice data is received, the voice data is reproduced by the speaker of the voice input/output unit (step S730), while the process advances to the step S731. In addition, if it is judged that the voice data is not received, the process advances to the step S731.

[0240] At the step S731, a judgment is made as to whether the voice communication is completed. If it is judged that

the voice communication is not completed, the process returns to the step S726. On the other hand, if it is judged that the communication is completed, the process is terminated.

[0241] The operating procedure of the first portable terminal 10 will be described in detail referring to Fig. 66.

[0242] First, steps S741 through S745 are executed for transmitting the device information of the first device 30E to the second portable terminal 10B.

[0243] Next, a judgment is made as to whether the connection establishment notice from the first device 30E is received (step S746). When the receipt of the connection establishment notice is confirmed, a judgment is made as to whether voice data is inputted from the microphone of the voice input/output unit (step S747).

[0244] If it is judged that voice is inputted, the voice is converted into voice data (step S748) and transmitted to the first device 30E (step S749), while the process advances to the step S753. If it is judged that voice is not inputted, a judgment is further made as to whether voice data is received from the first device 30E (step S751). If it is judged that the voice data is received, the voice data is reproduced by the speaker of the voice input/output unit (step S752), while the process advances to the step S753. In addition, if it is judged that the voice data is not received, the process advances to the step S753.

[0245] At the step S753, a judgment is made as to whether the voice communication is completed. If it is judged that the voice communication is not completed, the process returns to the step S747. On the other hand, if it is judged that the voice communication is completed, the process is terminated.

[0246] The operating procedure of the first device 30E will be described in detail referring to Fig. 67.

[0247] First, steps S761 through S763 are executed for establishing the connection with the second device 50E.

Next, a connection establishment notice is transmitted to the first portable terminal 10 (step S764). Then, a judgment is made as to whether voice data is received from the first portable terminal 10 (step S765).

[0248] If it is judged that voice data is received, the voice data is encoded (step S769) and transmitted to the second device 50E (step S770), while the process advances to the step S771. On the other hand, if it is judged that voice data is not received, a judgment is made as to whether encoded data is received from the second device 50E (step S766). If it is judged that the encoded data is received, the encoded data is decoded (step S767) and transmitted to the first portable terminal 10 as voice data (step S7768), while the process advances to the step S771. In addition, if it is judged that the encoded data is not received, the process advances to the step S771.

[0249] At the step S771, a judgment is made as to whether the voice communication is completed. If it is judged that the voice communication is not completed, the process returns to the step S765. On the other hand, if it is judged that the voice communication is completed, the connection with the second device 50E will be severed (step S772).

[0250] Thus, the data volume of the device information is small compared to the transmitted data, i.e., the encoded voice data, and it causes little burden on the portable terminal for transmission/reception of the device information in Embodiment 4-1. Furthermore, the transmission/reception of the encoded voice data can be executed without being restricted by the function of the portable terminal, as it is executed via the computer network 90.

[0251] This invention is not limited to the embodiments described above but may be variously changed and modified within claims.

[0252] For example, Embodiment 1-3 through Embodiment 1-7 can be applied in various combinations. It is also possible

to apply Embodiment 1-10 or Embodiment 1-11 to Embodiment 3-2 in order to make the destination device manually selectable at a data receiving device or at a portable terminal.

[0253]

[Effects of the Invention]

According to the invention described above, it is possible to realize a function that a portable terminal does not have using another device located nearby without being restricted by the functions of the portable terminal while having a general applicability concerning data transmission and reception.

[Brief Explanation of the Drawings]

[Fig. 1]

Fig. 1 is a schematic diagram of a data transmit-receive system according to Embodiment 1-1.

[Fig. 2]

Fig. 2 is a block diagram of a portable terminal belonging to the data transmit-receive system according to Embodiment 1-1.

[Fig. 3]

Fig. 3 is a block diagram of a data receiving device belonging to the data transmit-receive system according to Embodiment 1-1.

[Fig. 4]

Fig. 4 is a block diagram of a data transmission device belonging to the data transmit-receive system according to Embodiment 1-1.

[Fig. 5]

Fig. 5 is a sequence chart of assistance in explaining the communication procedure of the data transmit-receive system according to Embodiment 1-1.

[Fig. 6]

Fig. 6 is an example table of assistance in explaining device information of the data receiving device according to Embodiment 1-1.

[Fig. 7]

Fig. 7 is a flowchart of assistance in explaining the operating procedure of the data transmission device according to Embodiment 1-1.

[Fig. 8]

Fig. 8 is a flowchart of assistance in explaining the operating procedure of the portable terminal according to Embodiment 1-1.

[Fig. 9]

Fig. 9 is a flowchart of assistance in explaining the operating procedure of the data receiving device according to Embodiment 1-1.

[Fig. 10]

Fig. 10 is a schematic diagram of a data transmit-receive system according to Embodiment 1-2.

[Fig. 11]

Fig. 11 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 1-3.

[Fig. 12]

Fig. 12 is an example table of assistance in explaining device information of a data receiving device according to Embodiment 1-3.

[Fig. 13]

Fig. 13 shows a selection screen of a liquid crystal display of the data transmission device according to Embodiment 1-3.

[Fig. 14]

Fig. 14 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 1-4.

[Fig. 15]

Fig. 15 is an example table of assistance in explaining device information edited by the portable terminal according to Embodiment 1-4.

[Fig. 16]

Fig. 16 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 1-5.

[Fig. 17]

Fig. 17 is an example table of assistance in explaining device information according to Embodiment 1-5.

[Fig. 18]

Fig. 18 shows a password input screen of a liquid crystal display of the data transmission device according to Embodiment 1-5.

[Fig. 19]

Fig. 19 is a flowchart of assistance in explaining the operating procedure of a data receiving device according to Embodiment 1-5.

[Fig. 20]

Fig. 20 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 1-6.

[Fig. 21]

Fig. 21 shows a password input screen of a liquid crystal display of the portable terminal according to Embodiment 1-6.

[Fig. 22]

Fig. 22 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 1-7.

[Fig. 23]

Fig. 23 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 1-7.

[Fig. 24]

Fig. 24 shows a transmission selection screen of a crystal display unit of the portable terminal according to Embodiment 1-7.

[Fig. 25]

Fig. 25 is a sequence chart of assistance in explaining the communication procedure of a data transmit-receive system according to Embodiment 1-8.

[Fig. 26]

Fig. 26 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 1-8.

[Fig. 27]

Fig. 27 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 1-8.

[Fig. 28]

Fig. 28 shows a transmission hold selection screen of the portable terminal according to Embodiment 1-8.

[Fig. 29]

Fig. 29 shows a transmission start selection screen of the portable terminal according to Embodiment 1-8.

[Fig. 30]

Fig. 30 is a schematic diagram of a data transmit-receive system according to Embodiment 1-9.

[Fig. 31]

Fig. 31 is a sequence chart of assistance in explaining the communication procedure of the data transmit-receive system according to Embodiment 1-9.

[Fig. 32]

Fig. 32 is an example table of assistance in explaining device information of a data receiving device according to Embodiment 1-9.

[Fig. 33]

Fig. 33 is an example table of assistance in explaining device information edited by a portable terminal according to Embodiment 1-9.

[Fig. 34]

Fig. 34 is a flowchart of assistance in explaining the

operating procedure of a data transmission device according to Embodiment 1-9.

[Fig. 35]

Fig. 35 is a flowchart of assistance in explaining the operating procedure of the portable terminal according to Embodiment 1-9.

[Fig. 36]

Fig. 36 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 1-10.

[Fig. 37]

Fig. 37 shows a data receiving device selection screen of a crystal display unit of the data transmission device according to Embodiment 1-10.

[Fig. 38]

Fig. 38 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 1-11.

[Fig. 39]

Fig. 39 is a sequence chart of assistance in explaining the communication procedure of a data transmit-receive system according to Embodiment 2-1.

[Fig. 40]

Fig. 40 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 2-1.

[Fig. 41]

Fig. 41 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 2-1.

[Fig. 42]

Fig. 42 is a flowchart of assistance in explaining the operating procedure of a data receiving device according to Embodiment 2-1.

[Fig. 43]

Fig. 43 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 2-2.

[Fig. 44]

Fig. 44 is a flowchart of assistance in explaining the operating procedure of a portable terminal according to Embodiment 2-2.

[Fig. 45]

Fig. 45 is a schematic diagram of a data transmit-receive system according to Embodiment 3-1.

[Fig. 46]

Fig. 46 is a sequence chart of assistance in explaining the communication procedure of the data transmit-receive system according to Embodiment 3-1.

[Fig. 47]

Fig. 47 is a flowchart of assistance in explaining the operating procedure of a second portable terminal according to Embodiment 3-1.

[Fig. 48]

Fig. 48 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 3-1.

[Fig. 49]

Fig. 49 is a flowchart of assistance in explaining the operating procedure of a first portable terminal according to Embodiment 3-1.

[Fig. 50]

Fig. 50 is a schematic diagram of a data transmit-receive system according to Embodiment 3-2.

[Fig. 51]

Fig. 51 is a sequence chart of assistance in explaining the communication procedure of the data transmit-receive system according to Embodiment 3-2.

[Fig. 52]

Fig. 52 is a flowchart of assistance in explaining the

operating procedure of a second portable terminal according to Embodiment 3-2.

[Fig. 53]

Fig. 53 is an example table of assistance in explaining device information according to Embodiment 3-2.

[Fig. 54]

Fig. 54 shows a data transmission device instruction screen of a crystal display unit of the second portable terminal according to Embodiment 3-2.

[Fig. 55]

Fig. 55 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 3-2.

[Fig. 56]

Fig. 56 is a flowchart of assistance in explaining the operating procedure of a second portable terminal according to Embodiment 3-3.

[Fig. 57]

Fig. 57 shows a data transmission device selection screen of a crystal display unit of the second portable terminal according to Embodiment 3-3.

[Fig. 58]

Fig. 58 is a schematic diagram of a data transmit-receive system according to Embodiment 3-4.

[Fig. 59]

Fig. 59 is a flowchart of assistance in explaining the operating procedure of a data transmission device according to Embodiment 3-4.

[Fig. 60]

Fig. 60 is a flowchart of assistance in explaining the operating procedure of a second portable terminal according to Embodiment 3-5.

[Fig. 61]

Fig. 61 is a schematic diagram of a data transmit-receive system according to Embodiment 4-1.

[Fig. 62]

Fig. 62 is a sequence chart of assistance in explaining the communication procedure of the data transmit-receive system according to Embodiment 4-1.

[Fig. 63]

Fig. 63 is a flowchart of assistance in explaining the operating procedure of a second device according to Embodiment 4-1.

[Fig. 64]

Fig. 64 is an example table of assistance in explaining device information according to Embodiment 4-1.

[Fig. 65]

Fig. 65 is a flowchart of assistance in explaining the operating procedure of a second portable terminal according to Embodiment 4-1.

[Fig. 66]

Fig. 66 is a flowchart of assistance in explaining the operating procedure of a first portable terminal according to Embodiment 4-1.

[Fig. 67]

Fig. 67 is a flowchart of assistance in explaining the operating procedure of a first device according to Embodiment 4-1.

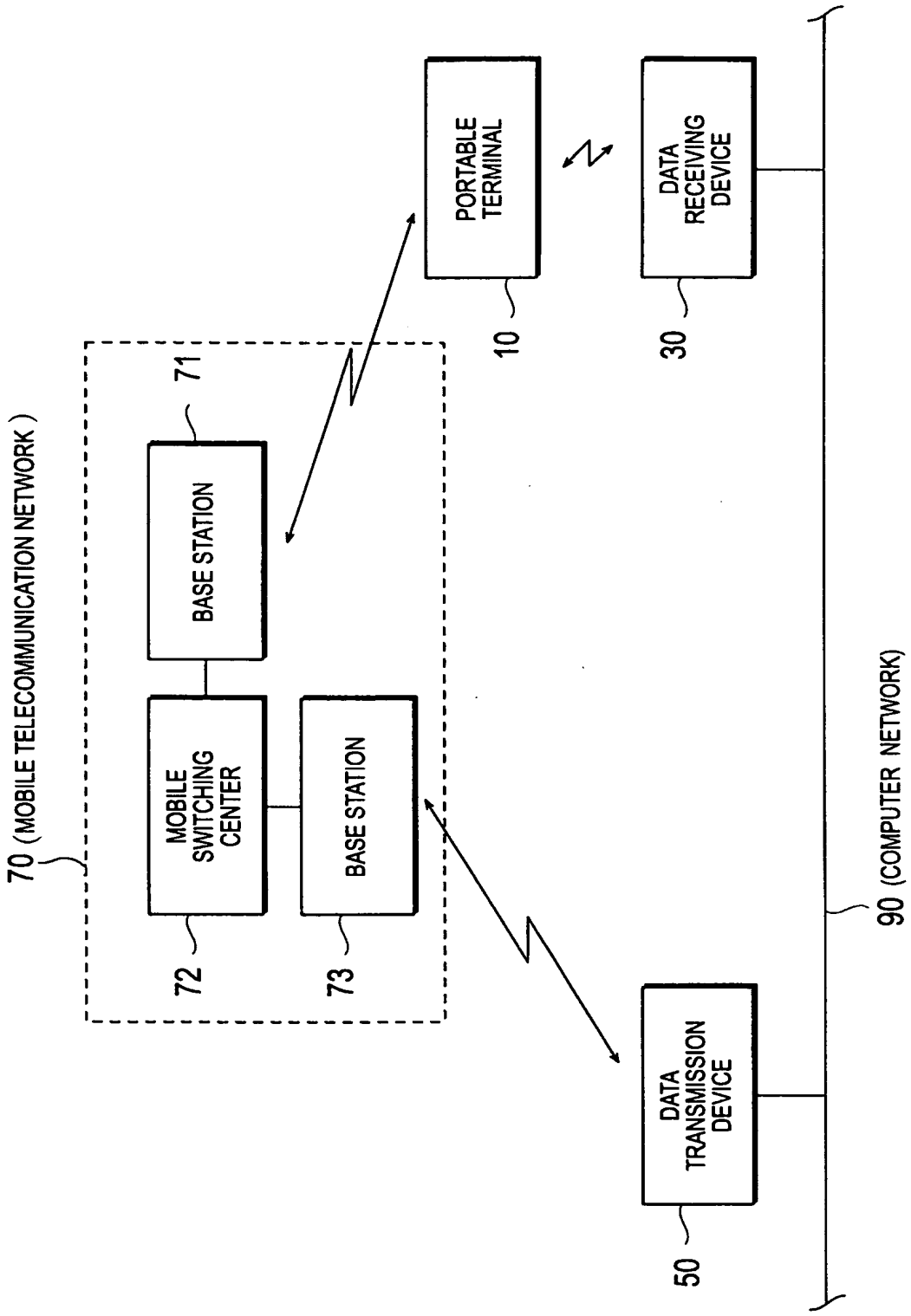
[Explanation of reference signs in Drawings]

10, 10A, 10B ...portable terminal,
11 ...control unit (CPU),
12 ...read only storage unit (ROM),
13 ...random access storage unit (RAM),
14 ...data processing unit,
15 ...operating unit,
16 ...voice input/output unit,
17, 18 ...interface,
19 ...battery,
20 ...bus,
30, 30A-30E ...data receiving device (first device),

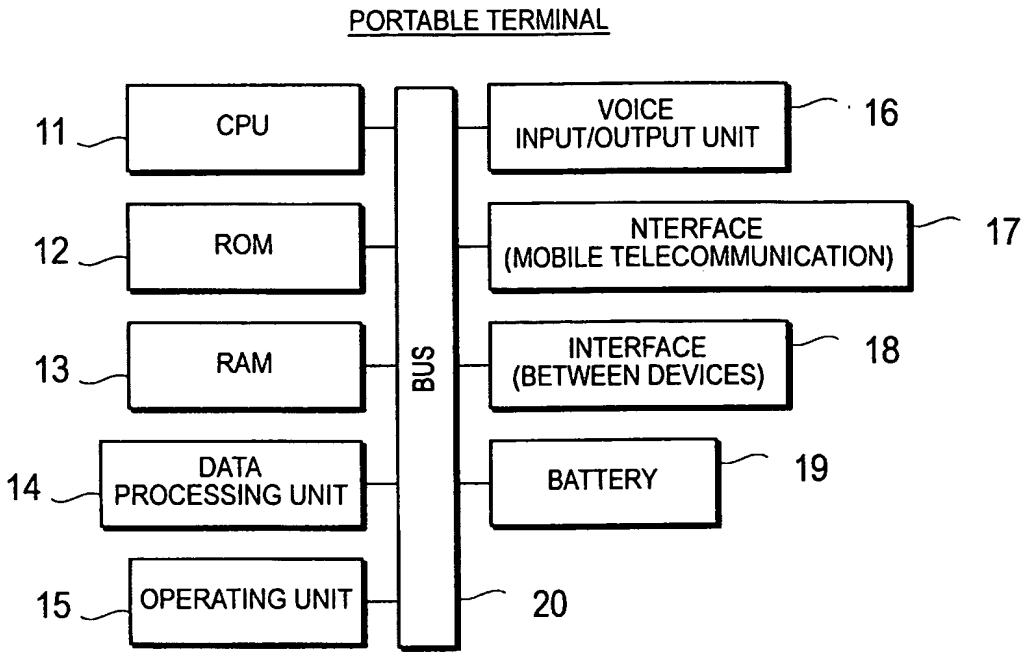
31 ...control unit (CPU),
32 ...read only storage unit (ROM),
33 ...random access storage unit (RAM),
34 ...data processing unit,
35 ...operating unit,
36 ...image reading unit,
37 ...printing unit,
38, 39 ...interface,
40 ...bus,
50, 50A-50E ...data transmission device (second device),
51 ...control unit (CPU),
52 ...read only storage unit (ROM),
53 ...random access storage unit (RAM),
54 ...data processing unit,
55 ...operating unit,
56 ...image reading unit,
57 ...printing unit,
58, 59 ...interface,
60 ...bus,
70 ...mobile telecommunication network,
71, 73 ...base station,
72 ...mobile switching center,
74 ...mobile Gateway Switch,
75 ...Point Of Interface,
80 ...fixed telephone network
82 ...Toll Switch,
83 ...Local Switch,
90 ...computer network.

[Document's Name] Figures

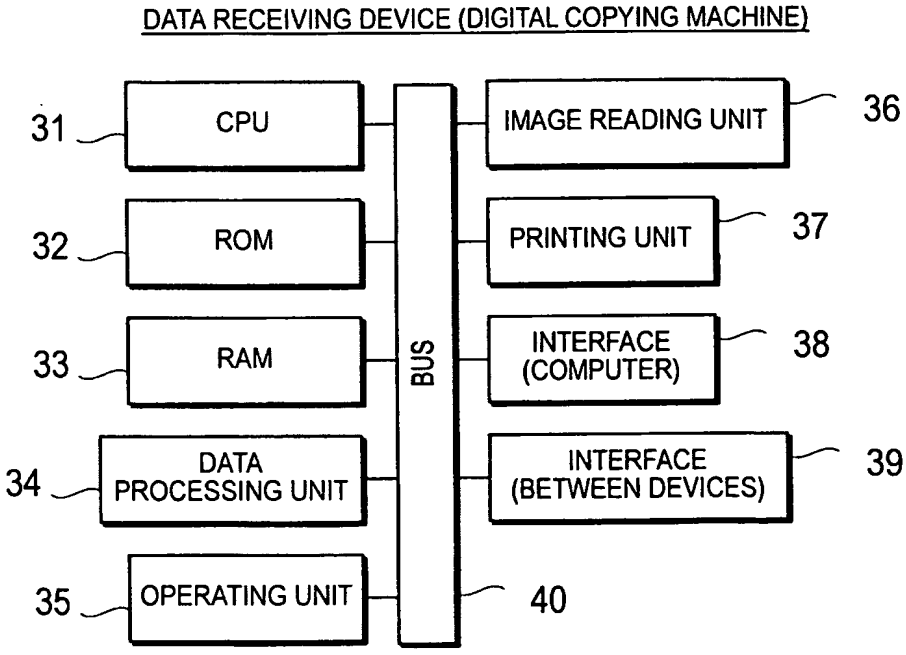
[Fig. 1]



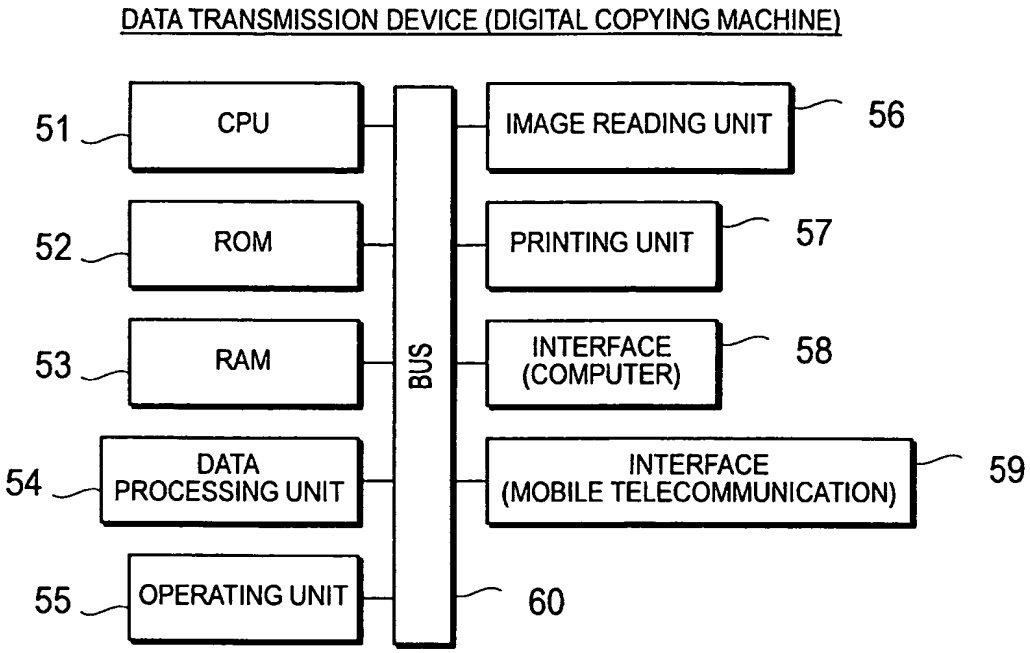
[Fig. 2]


PORTABLE TERMINAL
11
CPU
12
ROM
13
RAM
14
DATA PROCESSING UNIT
15
OPERATING UNIT
BUS
VOICE INPUT/OUTPUT UNIT
16
NTERFACE (MOBILE TELECOMMUNICATION)
17
INTERFACE (BETWEEN DEVICES)
18
BATTERY
19
20

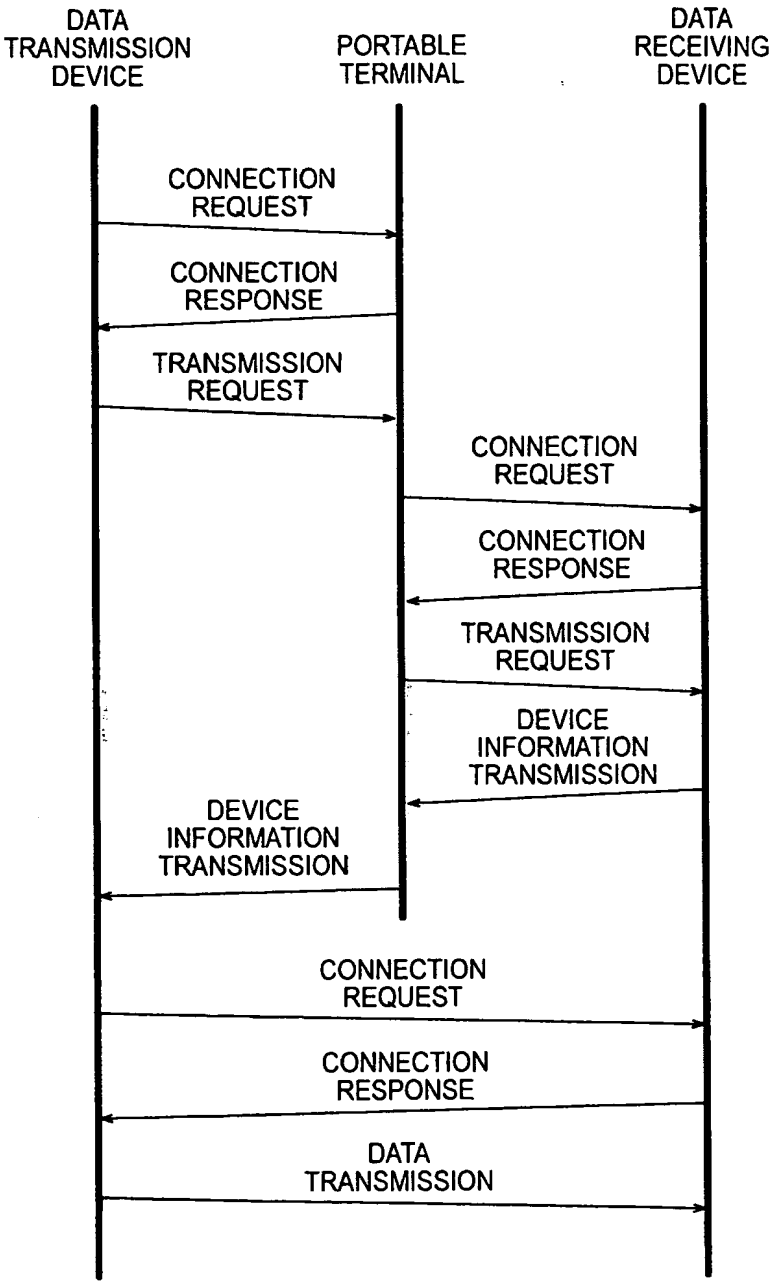
[Fig. 3]


DATA RECEIVING DEVICE (DIGITAL COPYING MACHINE)
31
CPU
32
ROM
33
RAM
34
DATA PROCESSING UNIT
35
OPERATING UNIT
BUS
IMAGE READING UNIT
36
PRINTING UNIT
37
INTERFACE (COMPUTER)
38
INTERFACE (BETWEEN DEVICES)
39
40

[Fig. 4]


DATA TRANSMISSION DEVICE (DIGITAL COPYING MACHINE)
51
CPU
52
ROM
53
RAM
54
DATA PROCESSING UNIT
55
OPERATING UNIT
BUS
IMAGE READING UNIT
56
PRINTING UNIT
57
INTERFACE (COMPUTER)
58
INTERFACE (MOBILE TELECOMMUNICATION)
59
60

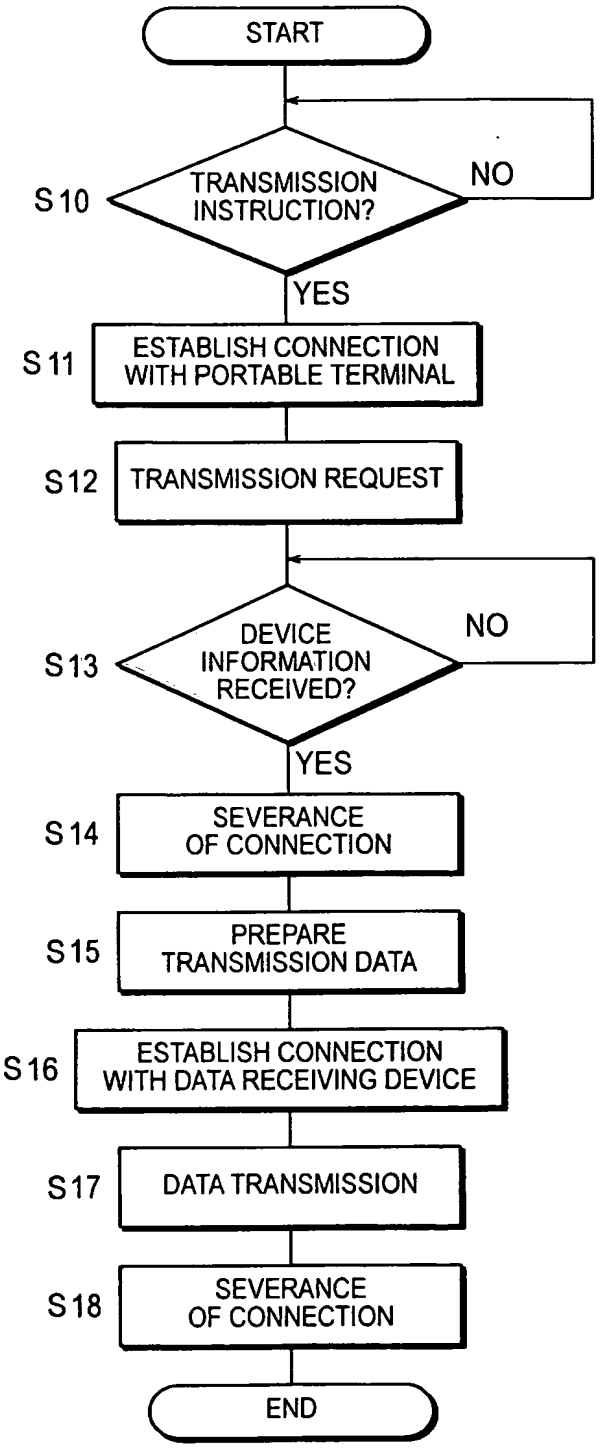
[Fig. 5]


DATA TRANSMISSION DEVICE
PORTABLE TERMINAL
DATA RECEIVING DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
DEVICE INFORMATION TRANSMISSION
DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
DATA TRANSMISSION

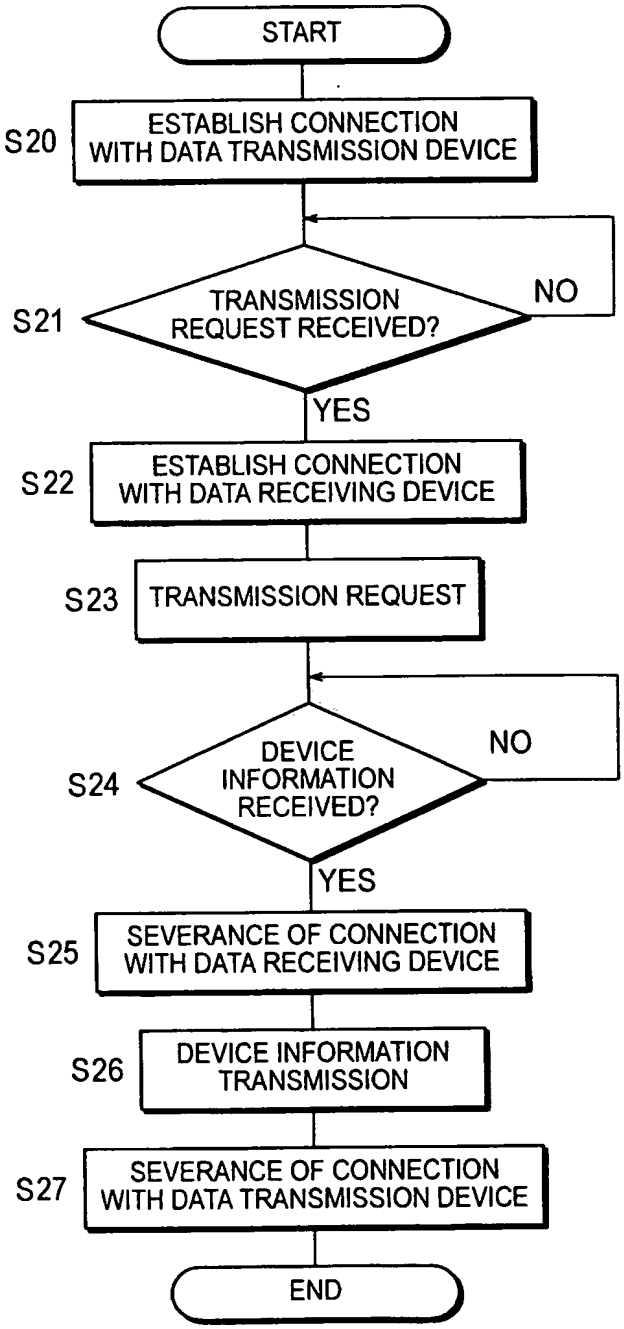
[Fig. 6]

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	COLOR/MONOCHROMATIC
	CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A, B
	PAPER SIZE	A4, A3, LETTER, LEGAL

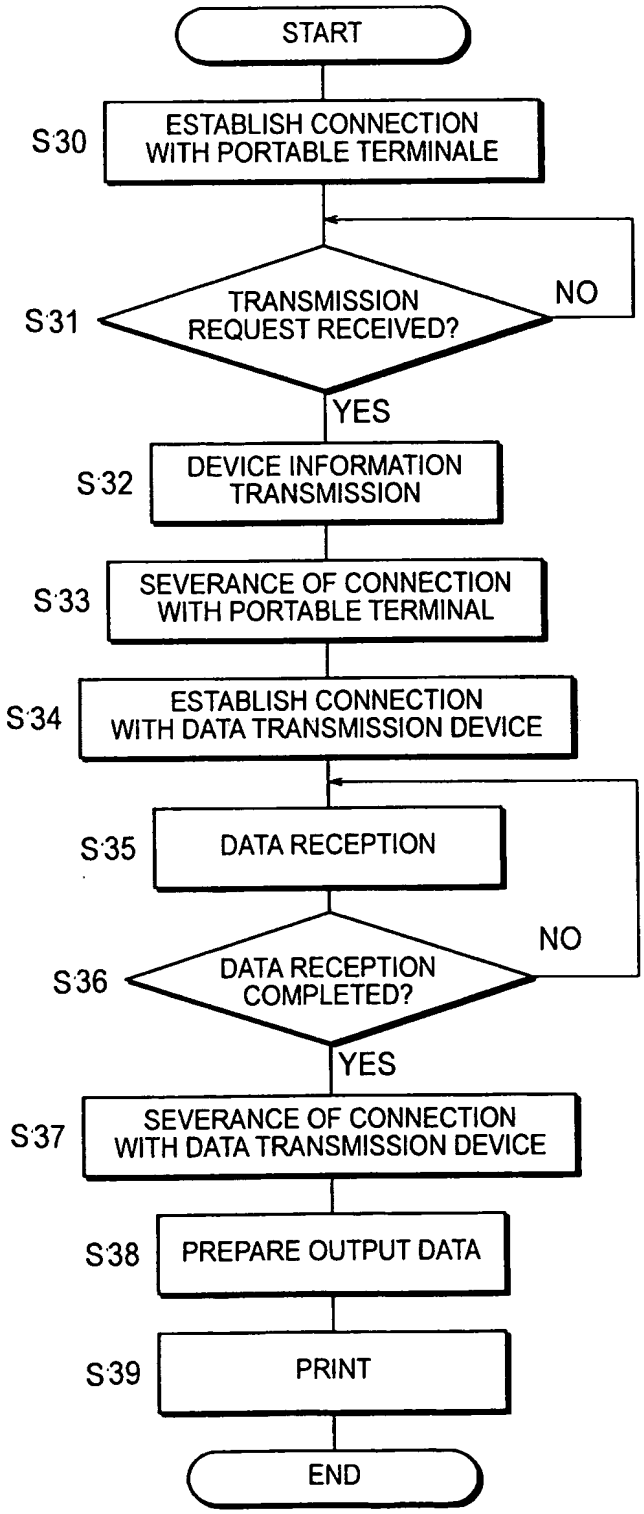
[Fig. 7]


START
S10
TRANSMISSION INSTRUCTION?
NO
YES
S11
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S12
TRANSMISSION REQUEST
S13
DEVICE INFORMATION RECEIVED?
NO
YES
S14
SEVERANCE OF CONNECTION
S15
PREPARE TRANSMISSION DATA
S16
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S17
DATA TRANSMISSION
S18
SEVERANCE OF CONNECTION
END

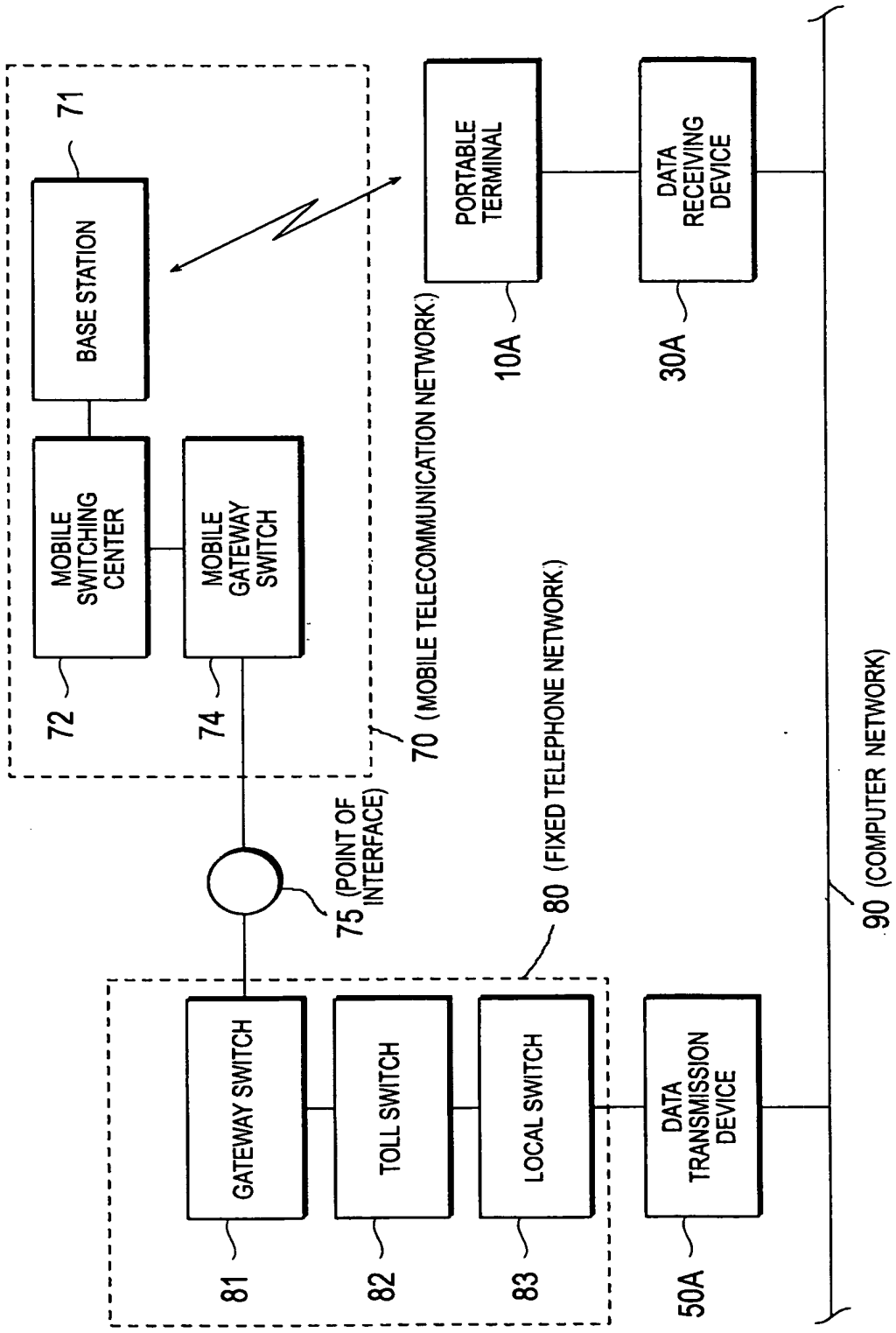
[Fig. 8]


START
S20
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S21
TRANSMISSION REQUEST RECEIVED?
NO
YES
S22
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S23
TRANSMISSION REQUEST
S24
DEVICE INFORMATION RECEIVED?
NO
YES
S25
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S26
DEVICE INFORMATION TRANSMISSION
S27
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

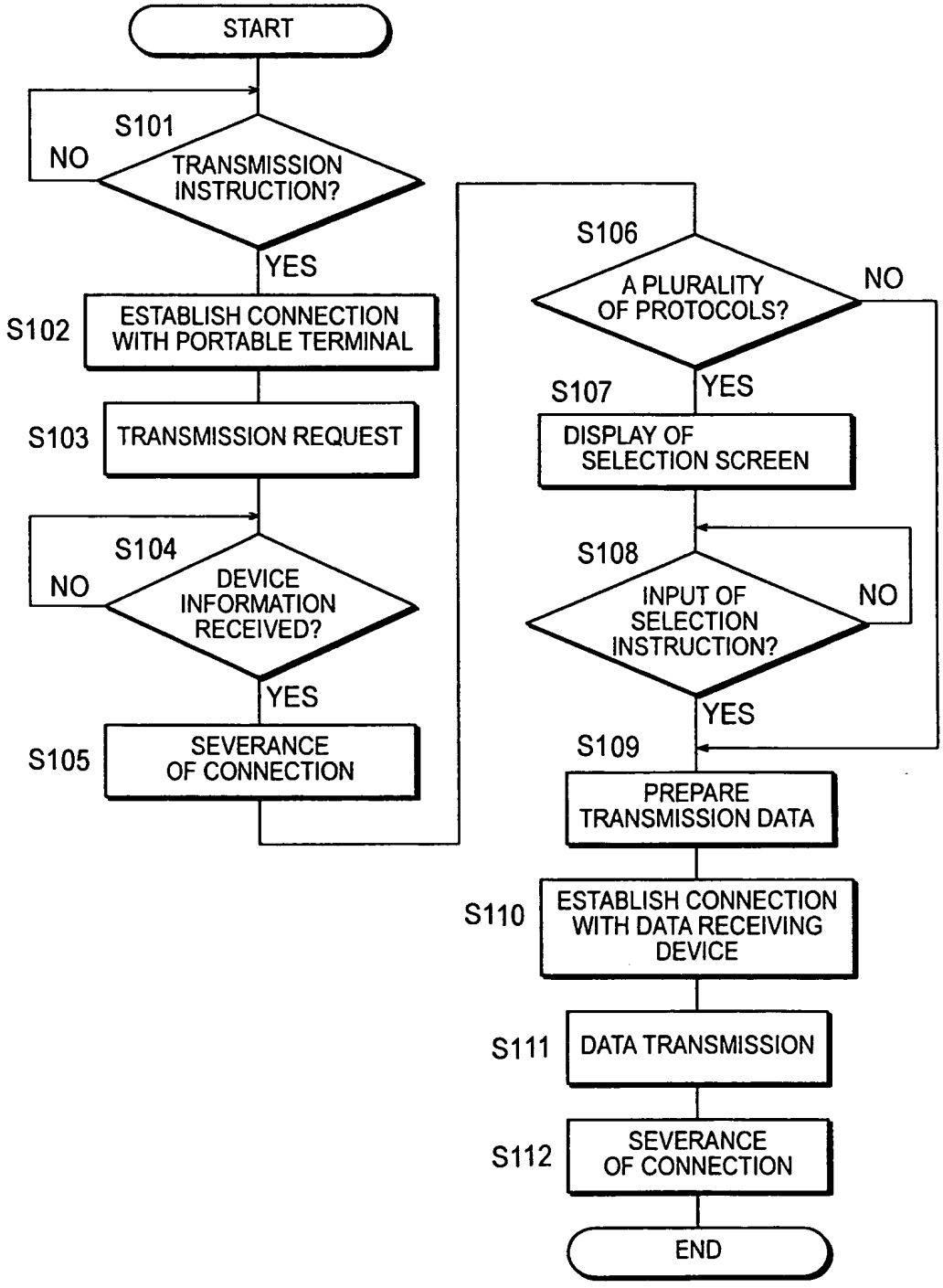
[Fig. 9]


START
S30
ESTABLISH CONNECTION WITH PORTABLE TERMINALE
S31
TRANSMISSION REQUEST RECEIVED?
NO
YES
S32
DEVICE INFORMATION TRANSMISSION
S33
SEVERANCE OF CONNECTION WITH PORTABLE TERMINAL
S34
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S35
DATA RECEPTION
S36
DATA RECEPTION COMPLETED?
NO
YES
S37
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
S38
PREPARE OUTPUT DATA
S39
PRINT
END

[Fig. 10]


71
BASE STATION
MOBILE SWITCHING CENTER
MOBILE GATEWAY SWITCH
72
74
70 (MOBILE TELECOMMUNICATION NETWORK)
PORTABLE TERMINAL
10A
DATA RECEIVING DEVICE
30A
75 (POINT OF INTERFACE)
80 (FIXED TELEPHONE NETWORK)
90 (COMPUTER NETWORK)
GATEWAY SWITCH
TOLL SWITCH
LOCAL SWITCH
DATA TRANSMISSION DEVICE
81
82
83
50A

[Fig. 11]


START
S101
NO
TRANSMISSION INSTRUCTION?
YES
S102
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S103
TRANSMISSION REQUEST
S104
NO
DEVICE INFORMATION RECEIVED?
YES
S105
SEVERANCE OF CONNECTION
S106
A PLURALITY OF PROTOCOLS?
NO
YES
S107
DISPLAY OF SELECTION SCREEN
S108
INPUT OF SELECTION INSTRUCTION?
NO
YES
S109
PREPARE TRANSMISSION DATA
S110
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S111
DATA TRANSMISSION
S112
SEVERANCE OF CONNECTION
END

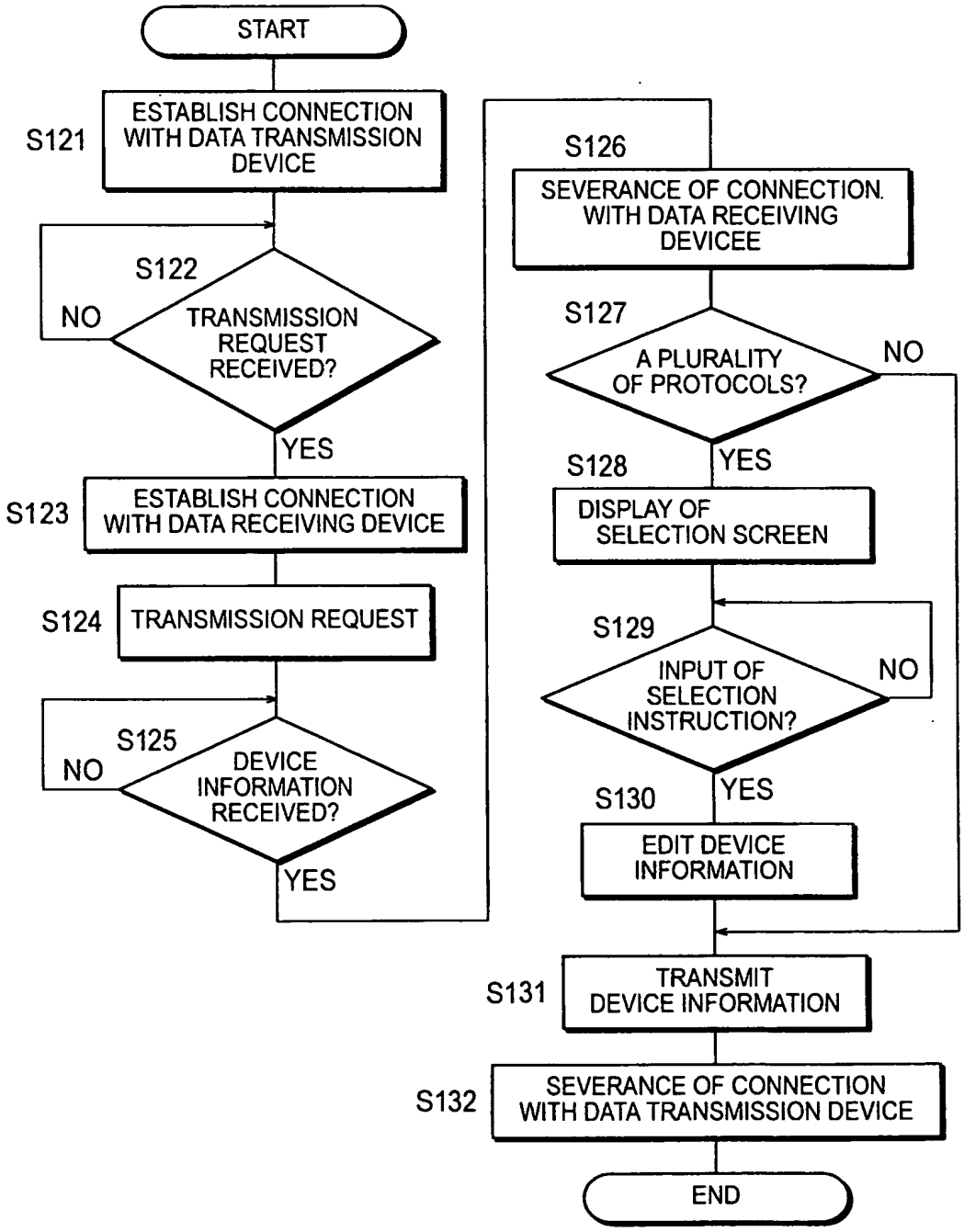
[Fig. 12]

	PROTOCOL	IDENTIFICATION CODE	DATE FORMAT
CONNECTION INFORMATION	TCP/IP	IP ADDRESS	
	FTP	SERVER NAME DIRECTORY PASSWORD	PAGE DESCRIPTION LANGUAGE A PAGE DESCRIPTION LANGUAGE B BITMAP DATA
	IFAX	E-MAIL ADDRESS	TIFF-F COMPRESSION
	IPP	E-MAIL ADDRESS	TIFF-F COMPRESSION
	LPR	IP ADDRESS	PAGE DESCRIPTION LANGUAGE A PAGE DESCRIPTION LANGUAGE B
	FAX	FACSIMILE NUMBER	CONFORM TO FAX
	HTTP	URL (SERVER NAME/DIRECTORY) PASSWORD	JPEG TIFF
	ITEM	CONTENS	
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI	
	PRINTING MODE	COLOR/MONOCHROMATIC	
	CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A, B	
	PAPER SIZE	A4, A3, LETTER, LEGAL	

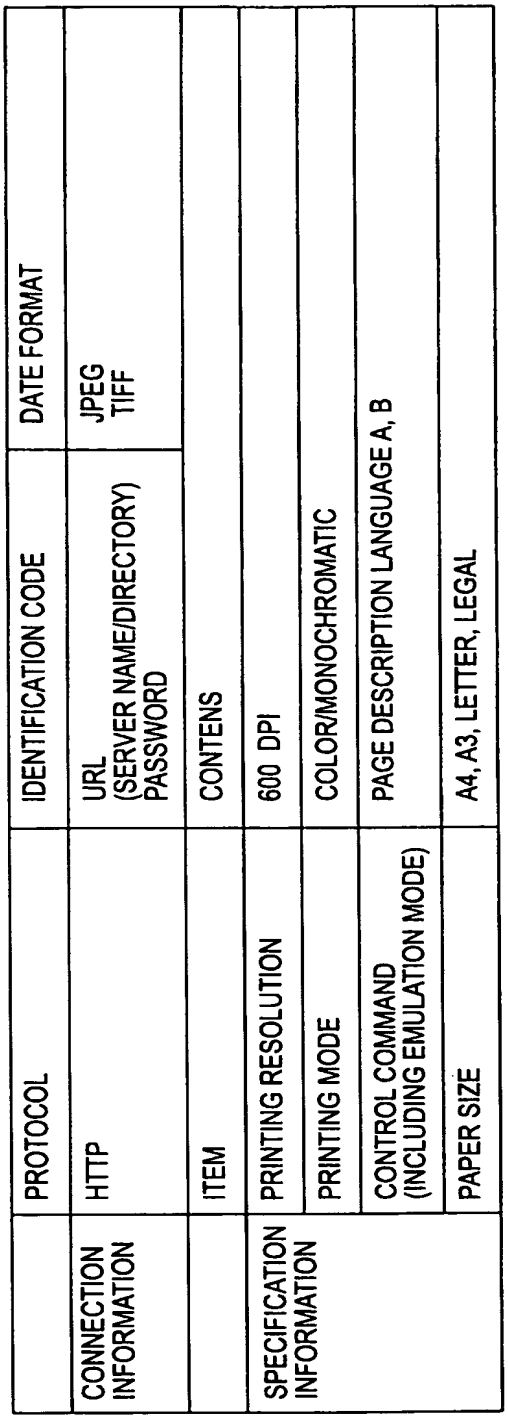
[Fig. 13]

TRANSMISSION METHOD	TRANSMISSION FORMAT
FTP TRANSMISSION	STORE IN THE BUILT-IN STORAGE UNIT
FTP TRANSMISSION	COLOR/MONOCHROMATIC PRINTING
LPR TRANSMISSION	PAGE DESCRIPTION LANGUAGE A COLOR/MONOCHROMATIC PRINTING
LPR TRANSMISSION	PAGE DESCRIPTION LANGUAGE B COLOR/MONOCHROMATIC PRINTING
IFAX TRANSMISSION	MONOCHROMATIC PRINTING
IPP TRANSMISSION	MONOCHROMATIC PRINTING
FAX TRANSMISSION	MONOCHROMATIC PRINTING
HTTP TRANSMISSION	BROWSER DISPLAY COLOR/MONOCHROMATIC

[Fig. 14]

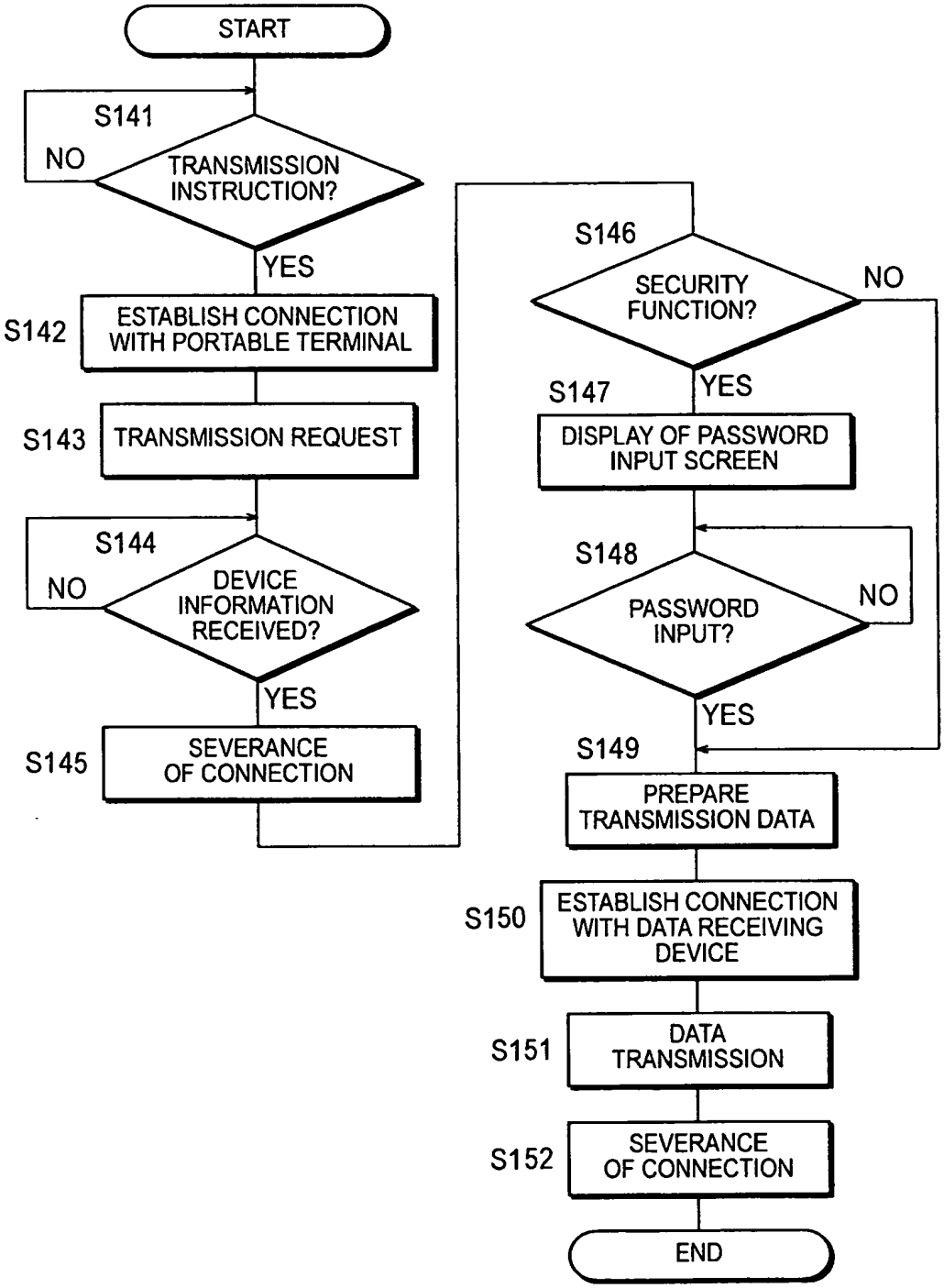

START
S121
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S122
NO
TRANSMISSION REQUEST RECEIVED?
YES
S123
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S124
TRANSMISSION REQUEST
S125
NO
DEVICE INFORMATION RECEIVED?
YES
S126
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICEE
S127
A PLURALITY OF PROTOCOLS?
NO
YES
S128
DISPLAY OF SELECTION SCREEN
S129
INPUT OF SELECTION INSTRUCTION?
NO
YES
S130
EDIT DEVICE INFORMATION
S131
TRANSMIT DEVICE INFORMATION
S132
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

[Fig. 15]



	PROTOCOL	IDENTIFICATION CODE	DATE FORMAT
CONNECTION INFORMATION	HTTP	URL (SERVER NAME/DIRECTORY) PASSWORD	JPEG TIFF
	ITEM	CONTENS	
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI	
	PRINTING MODE	COLOR/MONOCHROMATIC	
	CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A, B	
	PAPER SIZE	A4, A3, LETTER, LEGAL	

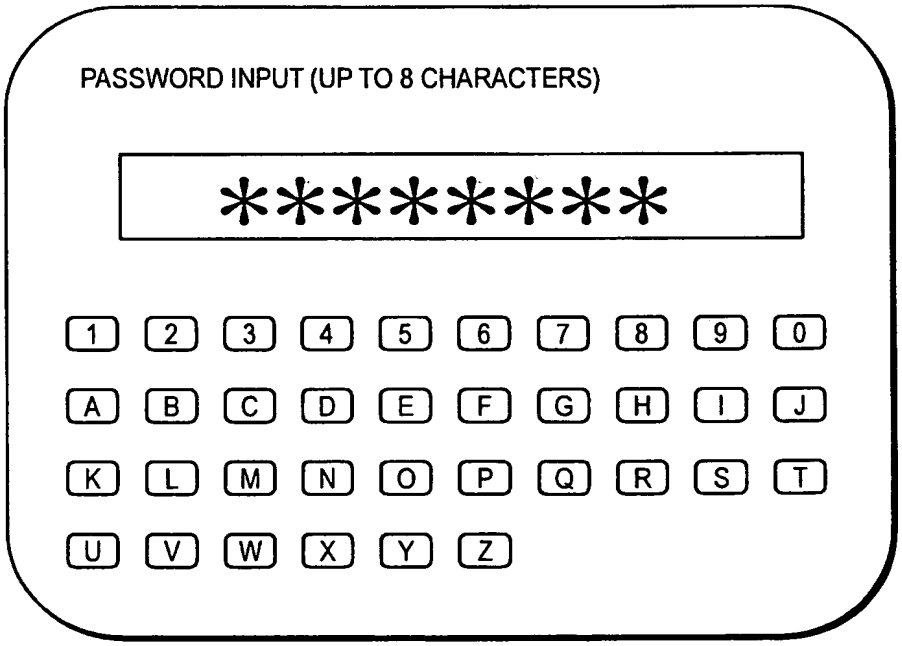
[Fig. 16]


START
S141
NO
TRANSMISSION INSTRUCTION?
YES
S142
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S143
TRANSMISSION REQUEST
S144
NO
DEVICE INFORMATION RECEIVED?
YES
S145
SEVERANCE OF CONNECTION
S146
SECURITY FUNCTION?
NO
YES
S147
DISPLAY OF PASSWORD INPUT SCREEN
S148
PASSWORD INPUT?
NO
YES
S149
PREPARE TRANSMISSION DATA
S150
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S151
DATA TRANSMISSION
S152
SEVERANCE OF CONNECTION
END

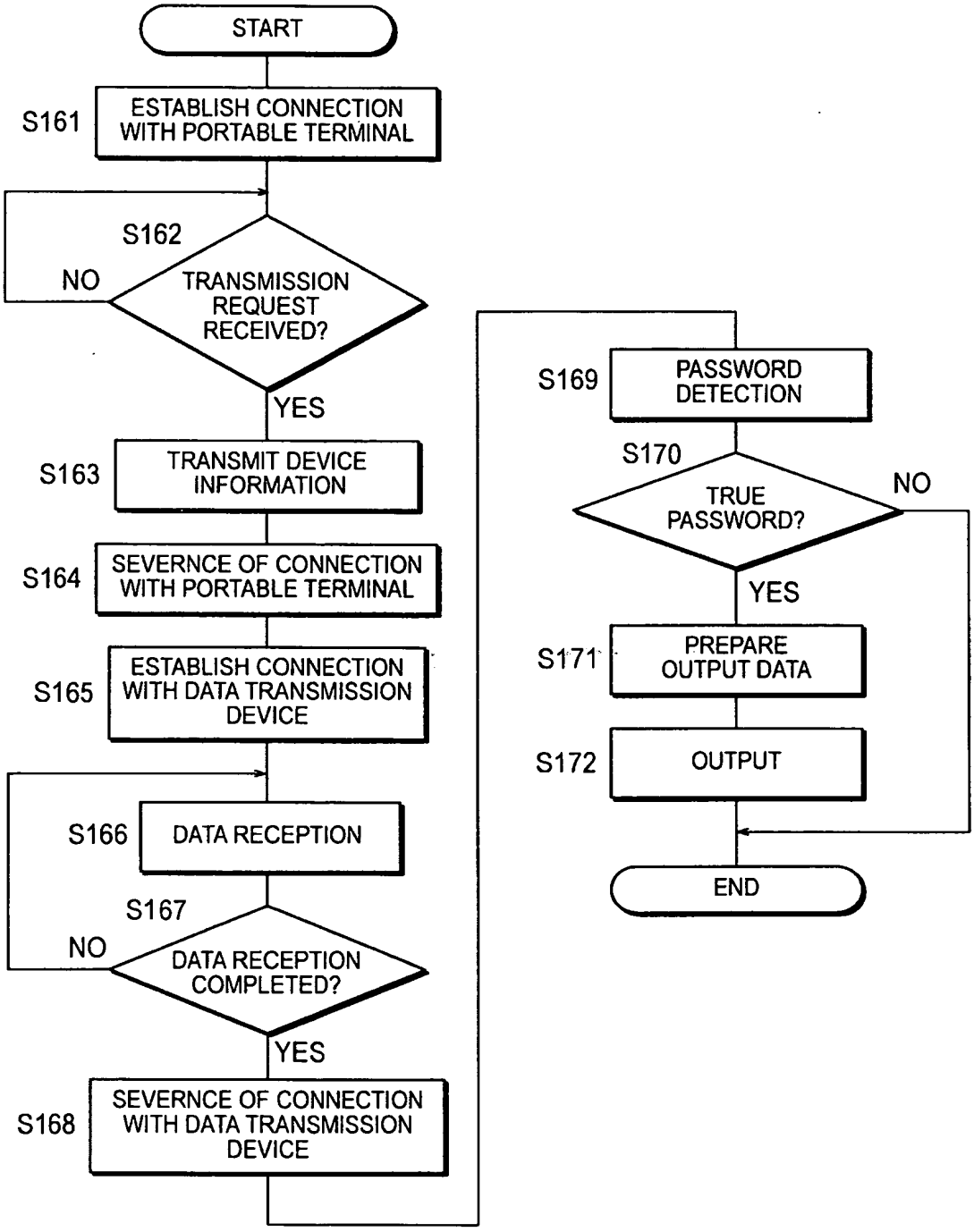
[Fig. 17]

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	COLOR/MONOCHROMATIC
	CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A, B
	PAPER SIZE	A4, A3, LETTER, LEGAL
	SECURITY	PASSWORD

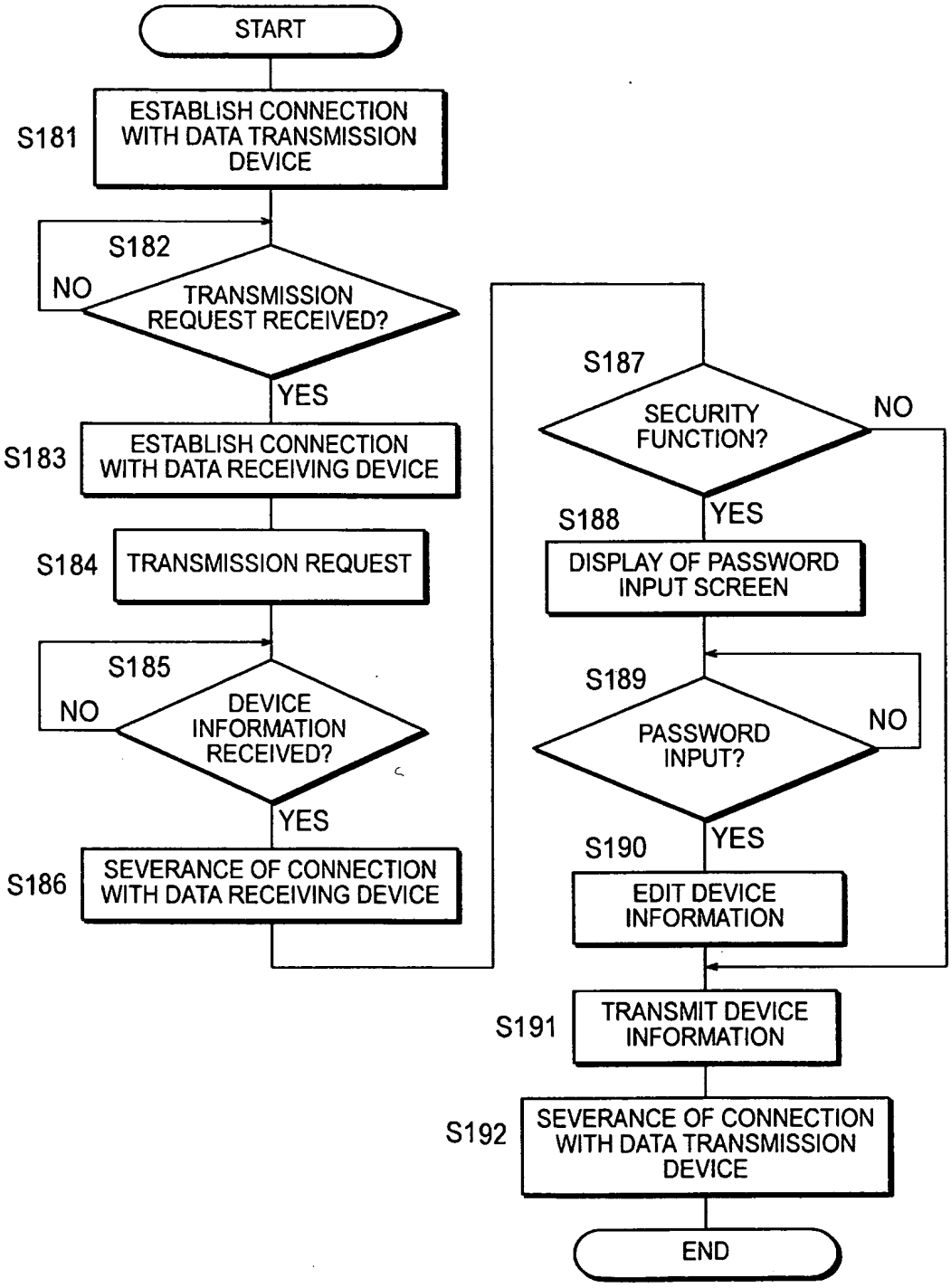
[Fig. 18]



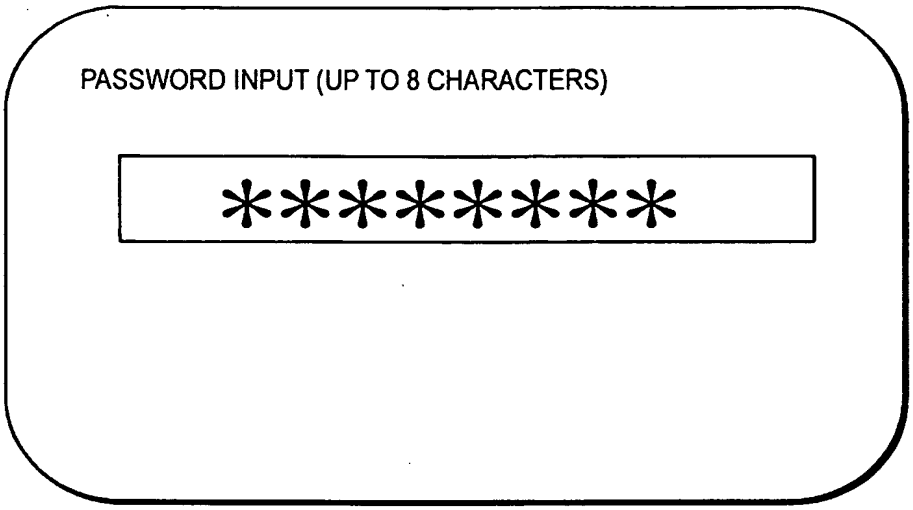
[Fig. 19]


START
S161
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S162
NO
TRANSMISSION REQUEST RECEIVED?
YES
S163
TRANSMIT DEVICE INFORMATION
S164
SEVERNCE OF CONNECTION WITH PORTABLE TERMINAL
S165
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S166
DATA RECEPTION
S167
NO
DATA RECEPTION COMPLETED?
YES
S168
SEVERNCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
S169
PASSWORD DETECTION
S170
TRUE PASSWORD?
NO
YES
S171
PREPARE OUTPUT DATA
S172
OUTPUT
END

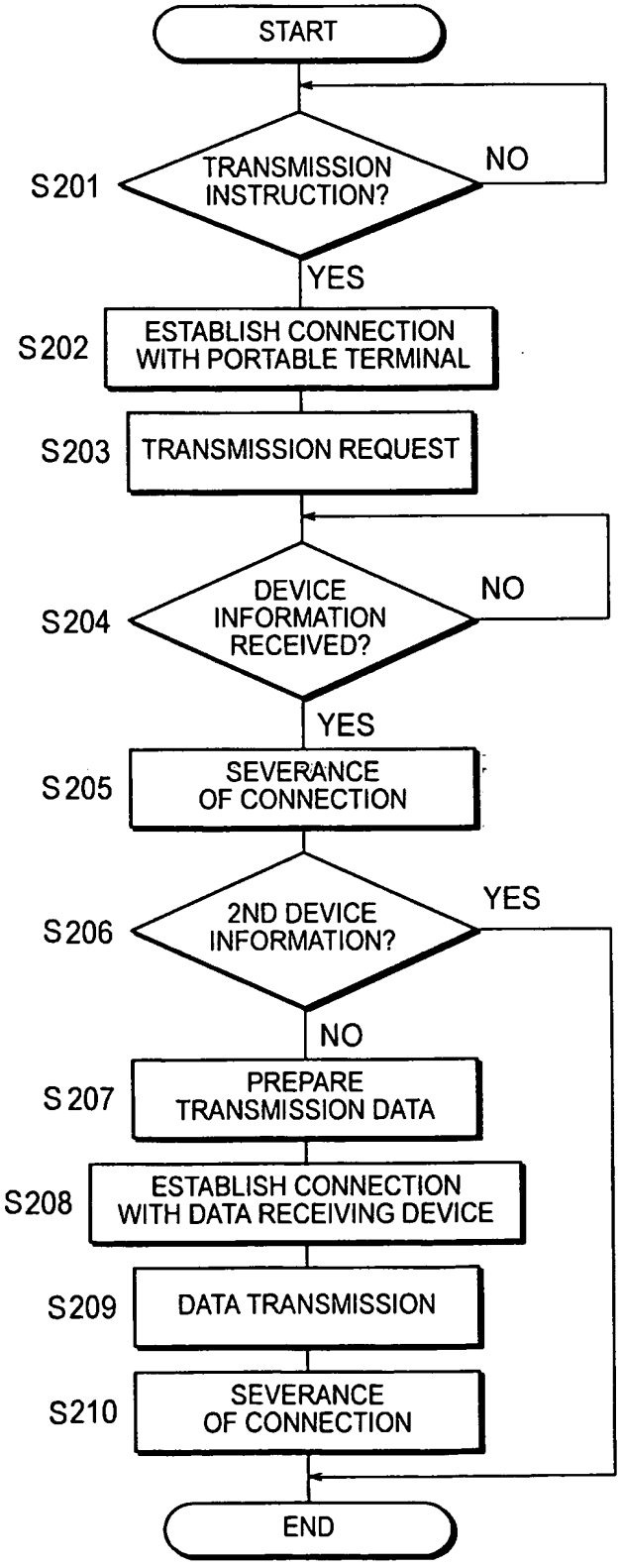
[Fig. 20]


START
S181
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S182
NO
TRANSMISSION REQUEST RECEIVED?
YES
S183
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S184
TRANSMISSION REQUEST
S185
NO
DEVICE INFORMATION RECEIVED?
YES
S186
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S187
SECURITY FUNCTION?
NO
YES
S188
DISPLAY OF PASSWORD INPUT SCREEN
S189
PASSWORD INPUT?
NO
YES
S190
EDIT DEVICE INFORMATION
S191
TRANSMIT DEVICE INFORMATION
S192
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

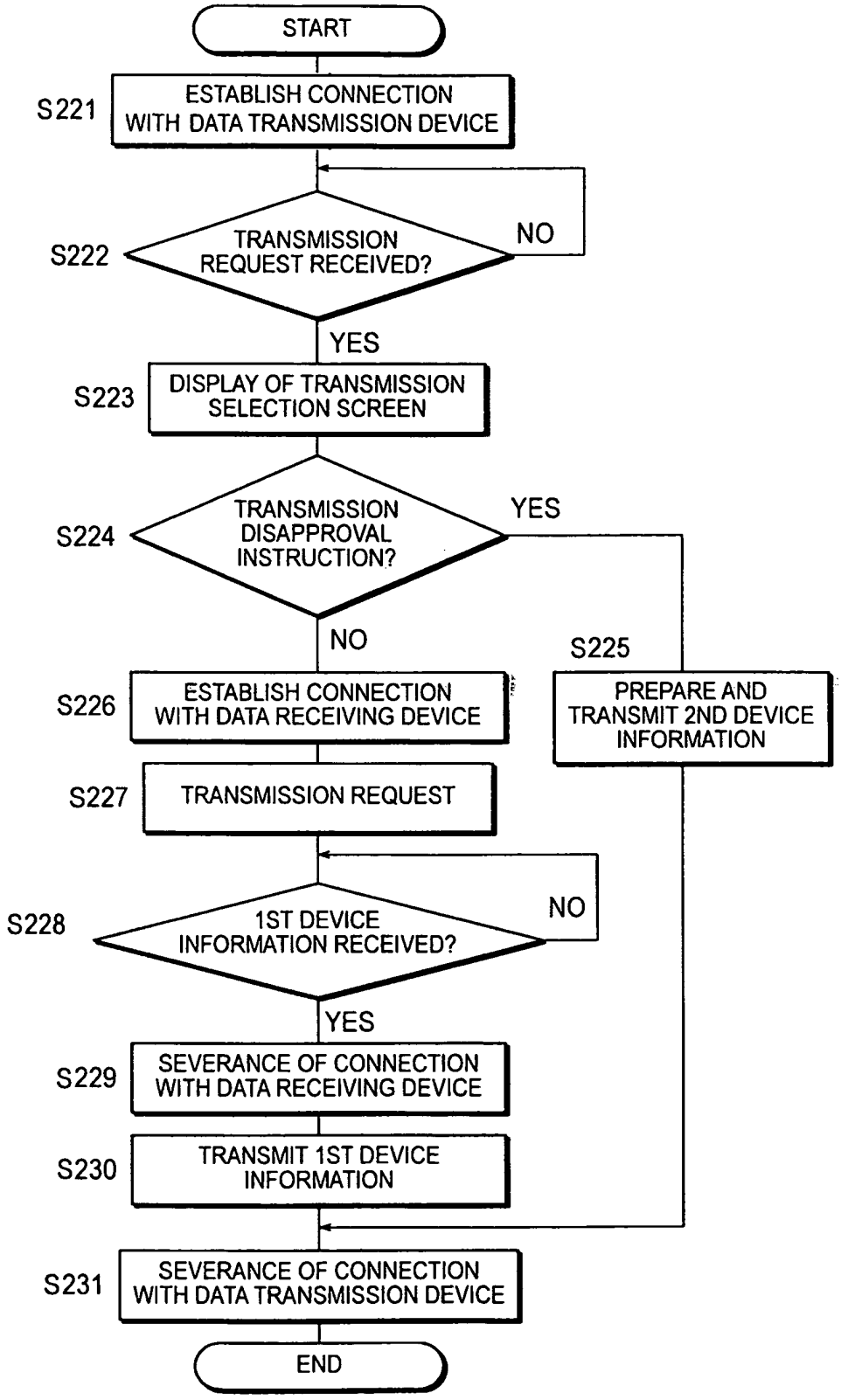
[Fig. 21]



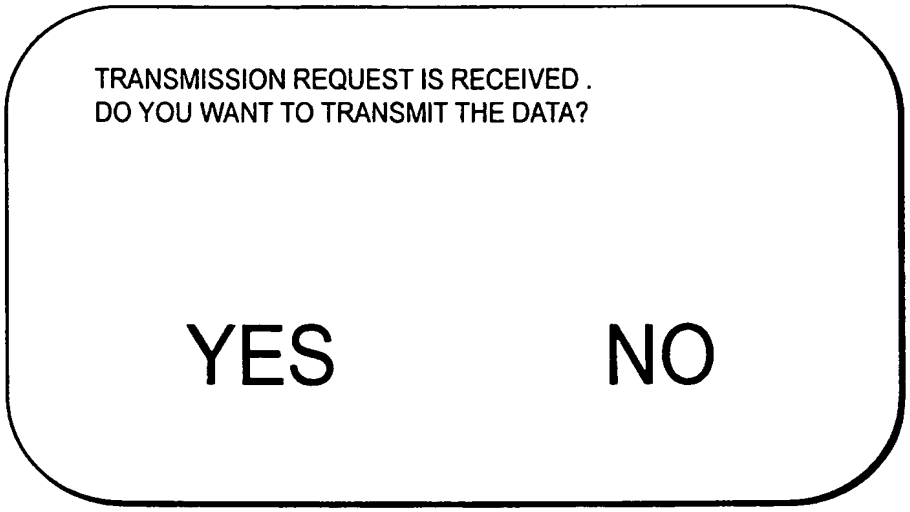
[Fig. 22]


START
S201
TRANSMISSION INSTRUCTION?
NO
YES
S202
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S203
TRANSMISSION REQUEST
S204
DEVICE INFORMATION RECEIVED?
NO
YES
S205
SEVERANCE OF CONNECTION
S206
2ND DEVICE INFORMATION?
YES
NO
S207
PREPARE TRANSMISSION DATA
S208
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S209
DATA TRANSMISSION
S210
SEVERANCE OF CONNECTION
END

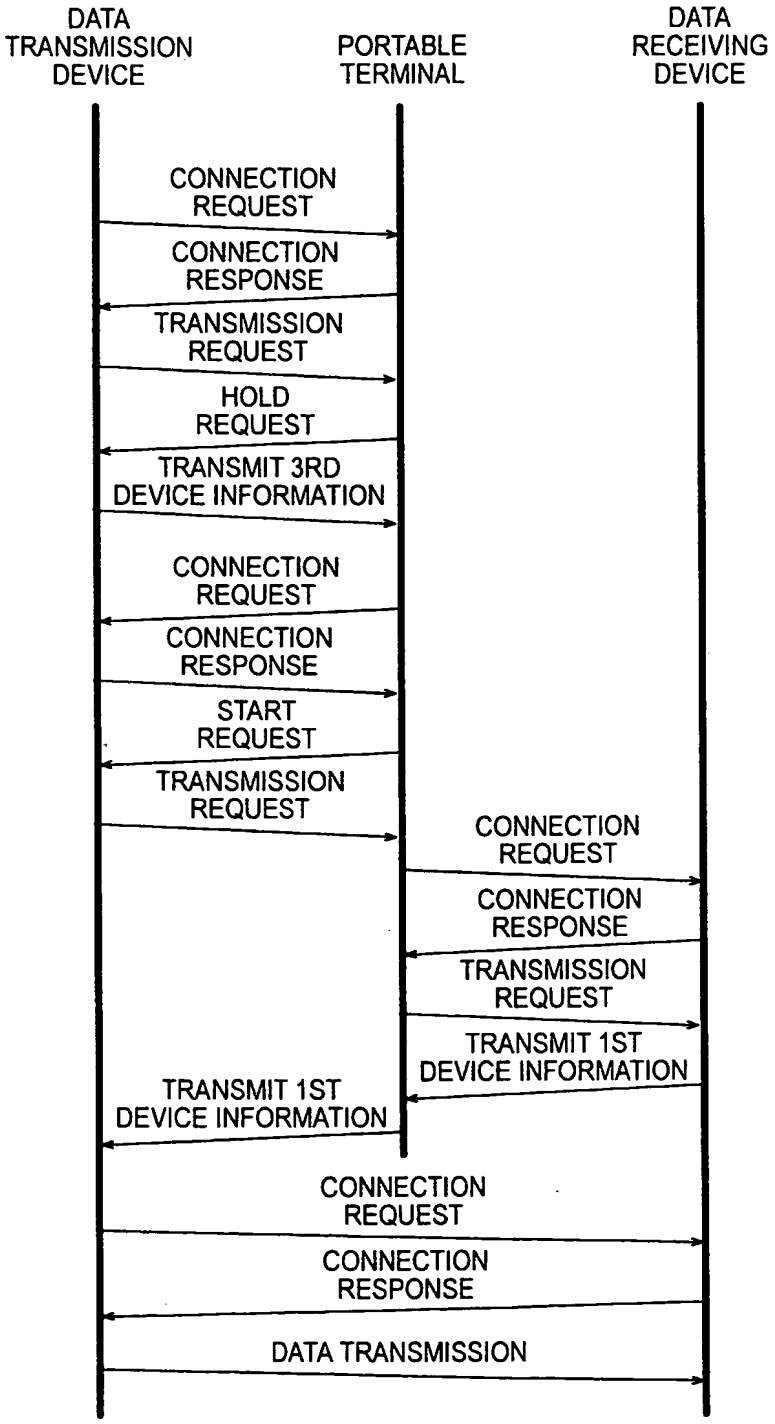
[Fig. 23]


START
S221
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S222
TRANSMISSION REQUEST RECEIVED?
NO
YES
S223
DISPLAY OF TRANSMISSION SELECTION SCREEN
S224
TRANSMISSION DISAPPROVAL INSTRUCTION?
YES
NO
S225
PREPARE AND TRANSMIT 2ND DEVICE INFORMATION
S226
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S227
TRANSMISSION REQUEST
S228
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S229
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S230
TRANSMIT 1ST DEVICE INFORMATION
S231
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

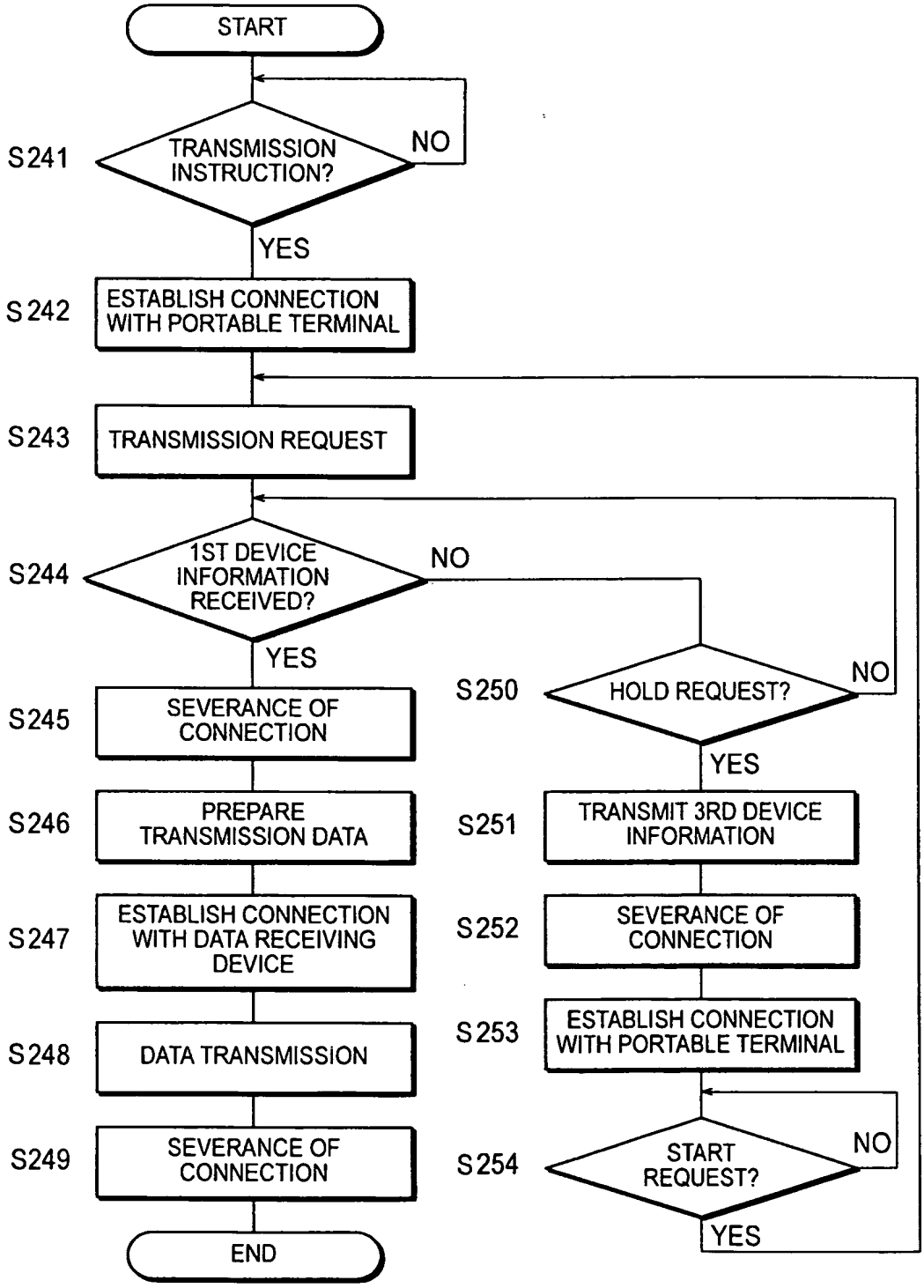
[Fig. 24]


TRANSMISSION REQUEST IS RECEIVED .
DO YOU WANT TO TRANSMIT THE DATA?
YES
NO

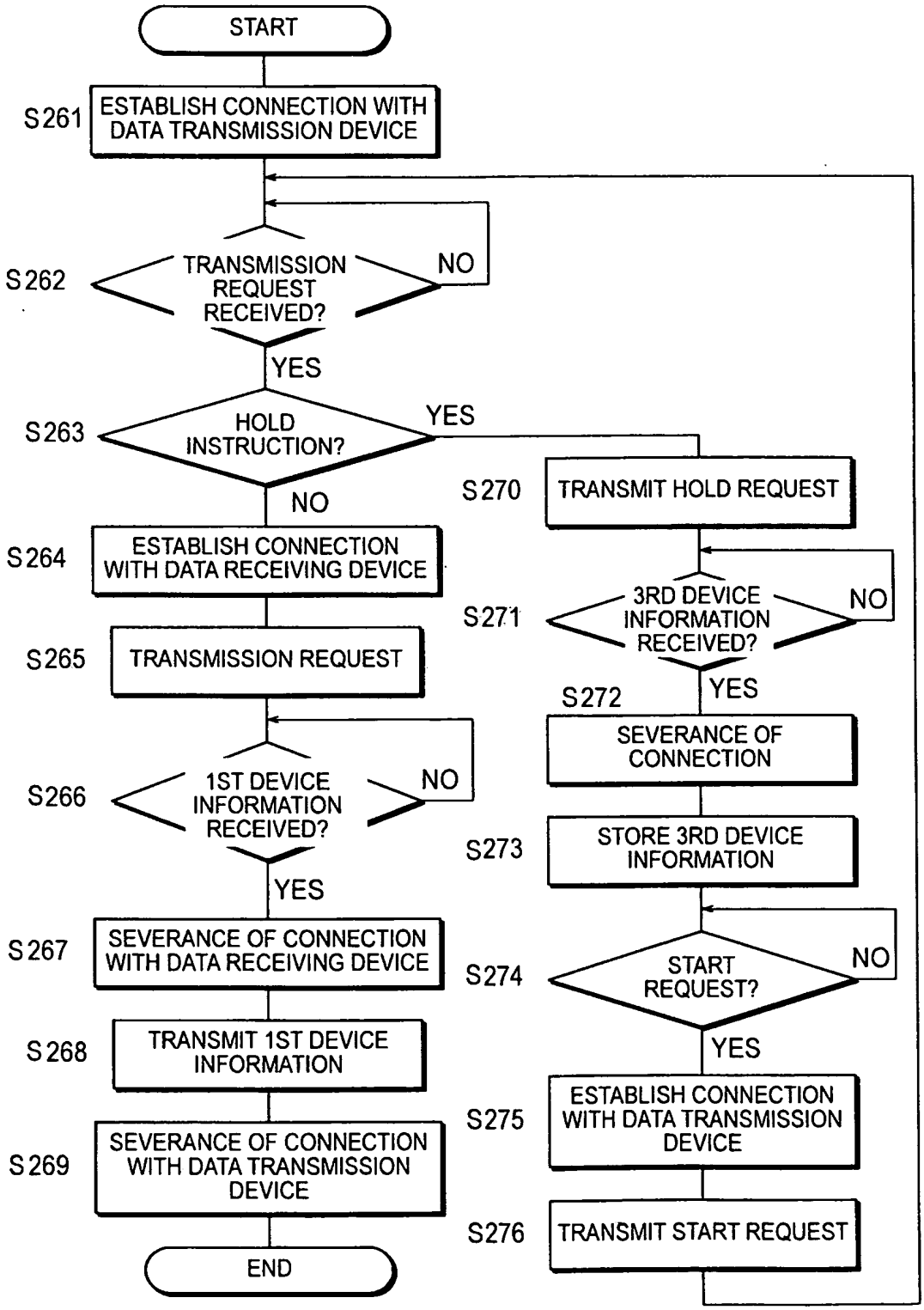
[Fig. 25]


DATA TRANSMISSION DEVICE
PORTABLE TERMINAL
DATA RECEIVING DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
HOLD REQUEST
TRANSMIT 3RD DEVICE INFORMATION
CONNECTION REQUEST
CONNECTION RESPONSE
START REQUEST
TRANSMISSION REQUEST
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
TRANSMIT 1ST DEVICE INFORMATION
TRANSMIT 1ST DEVICE INFORMATION
CONNECTION REQUEST
CONNECTION RESPONSE
DATA TRANSMISSION

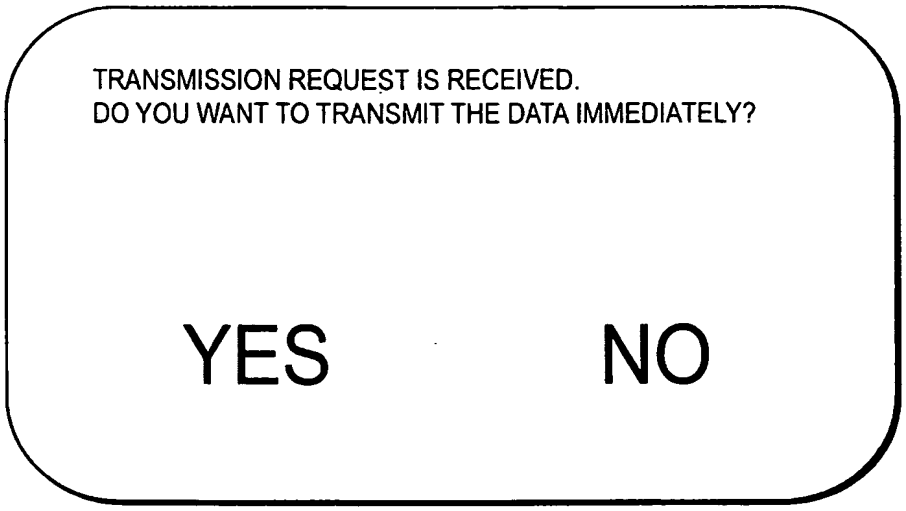
[Fig. 26]


START
S241
TRANSMISSION INSTRUCTION?
NO
YES
S242
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S243
TRANSMISSION REQUEST
S244
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S245
SEVERANCE OF CONNECTION
S246
PREPARE TRANSMISSION DATA
S247
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S248
DATA TRANSMISSION
S249
SEVERANCE OF CONNECTION
END
S250
HOLD REQUEST?
NO
YES
S251
TRANSMIT 3RD DEVICE INFORMATION
S252
SEVERANCE OF CONNECTION
S253
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S254
START REQUEST?
NO
YES

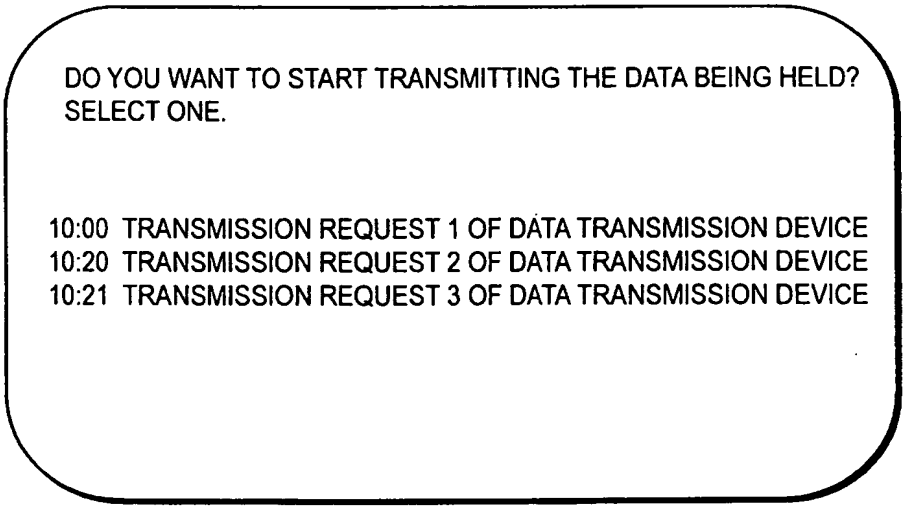
[Fig. 27]


START
S261
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S262
TRANSMISSION REQUEST RECEIVED?
NO
YES
S263
HOLD INSTRUCTION?
YES
NO
S264
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S265
TRANSMISSION REQUEST
S266
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S267
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S268
TRANSMIT 1ST DEVICE INFORMATION
S269
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END
S270
TRANSMIT HOLD REQUEST
S271
3RD DEVICE INFORMATION RECEIVED?
NO
YES
S272
SEVERANCE OF CONNECTION
S273
STORE 3RD DEVICE INFORMATION
S274
START REQUEST?
NO
YES
S275
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S276
TRANSMIT START REQUEST

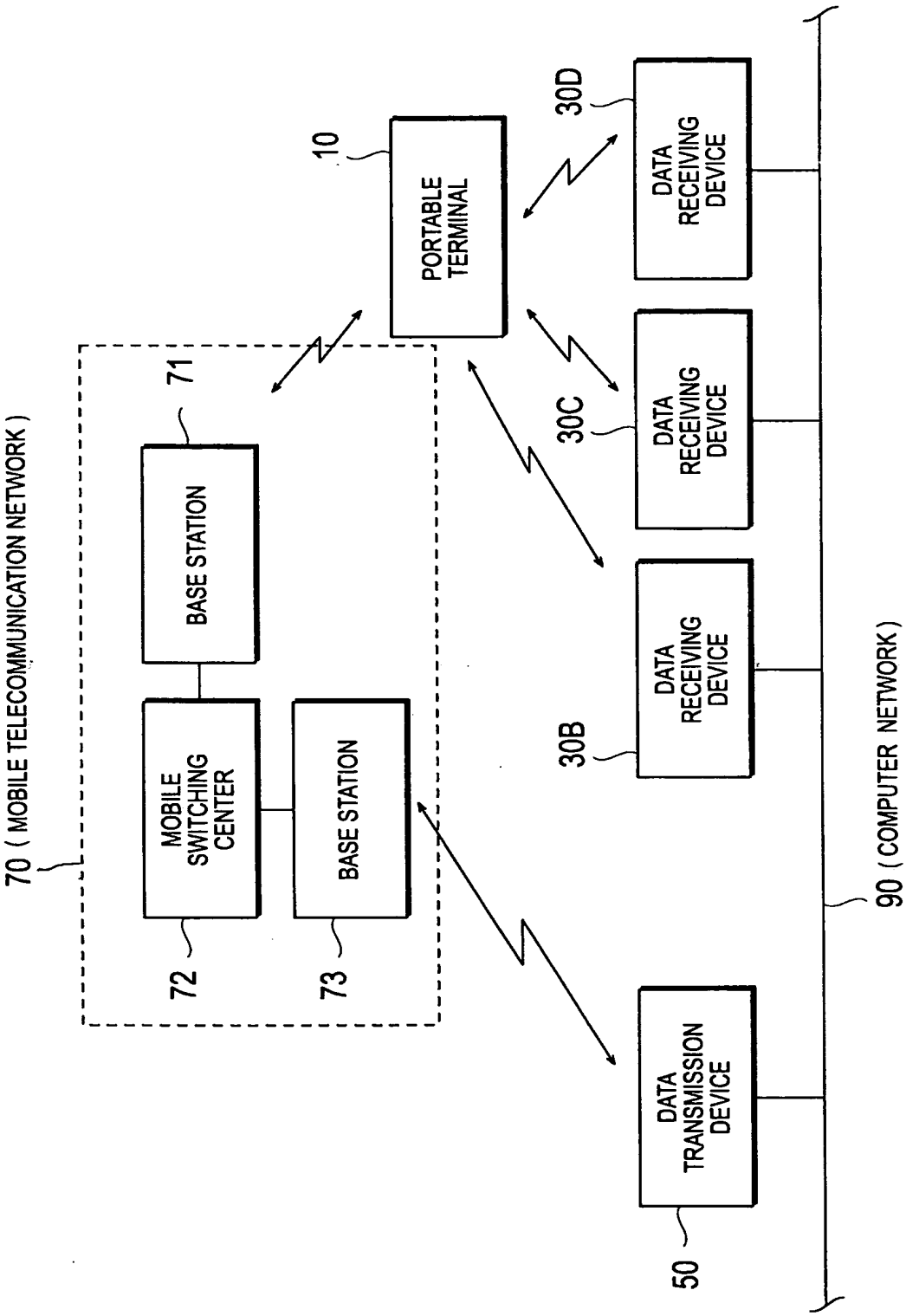
[Fig. 28]


TRANSMISSION REQUEST IS RECEIVED.
DO YOU WANT TO TRANSMIT THE DATA IMMEDIATELY?
YES
NO

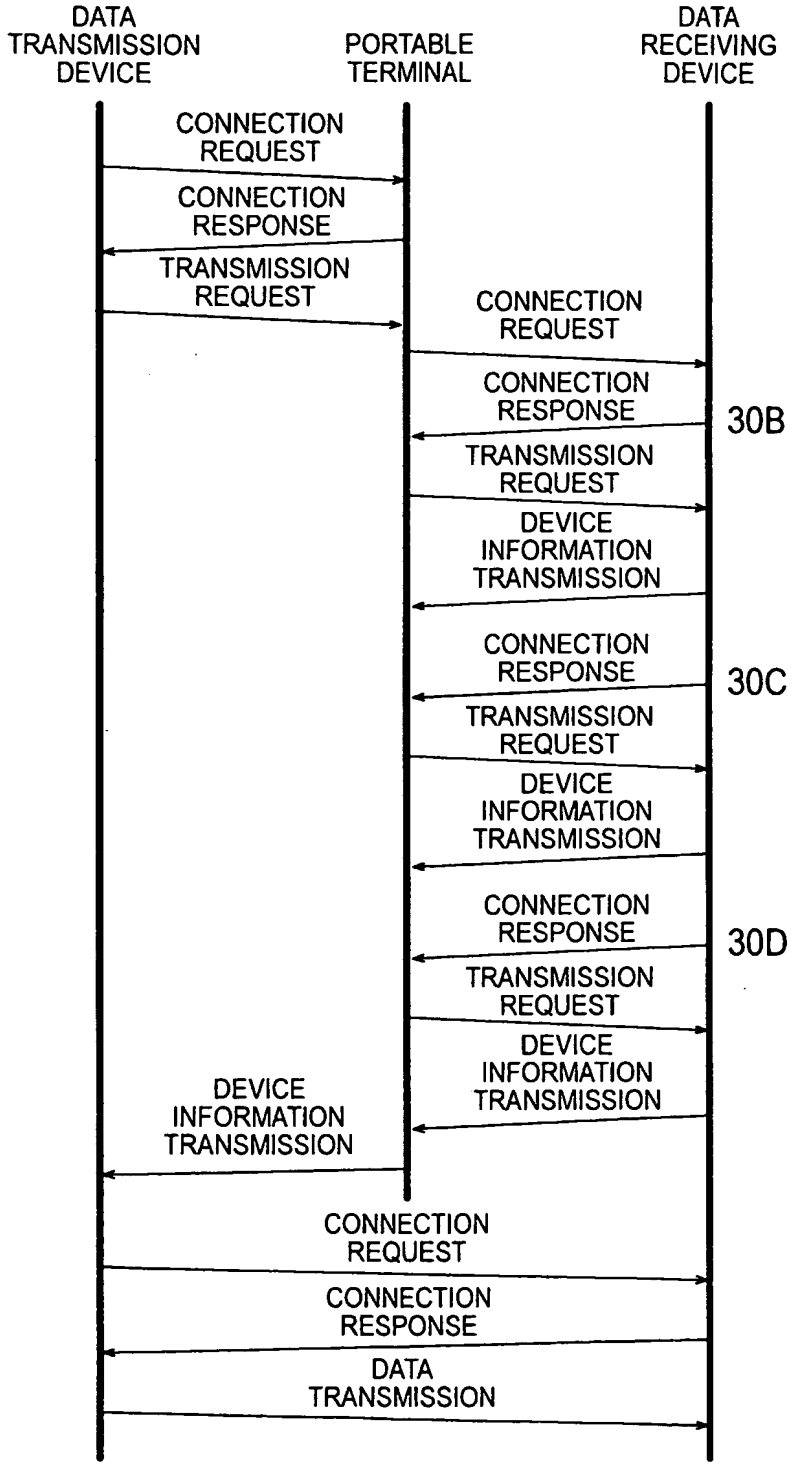
[Fig. 29]


DO YOU WANT TO START TRANSMITTING THE DATA BEING HELD?
SELECT ONE.
10:00 TRANSMISSION REQUEST 1 OF DATA TRANSMISSION DEVICE
10:20 TRANSMISSION REQUEST 2 OF DATA TRANSMISSION DEVICE
10:21 TRANSMISSION REQUEST 3 OF DATA TRANSMISSION DEVICE

[Fig. 30]


70 (MOBILE TELECOMMUNICATION NETWORK)
71
BASE STATION
MOBILE SWITCHING CENTER
72
BASE STATION
73
10
PORTABLE TERMINAL
30D
DATA RECEIVING DEVICE
30C
DATA RECEIVING DEVICE
30B
DATA RECEIVING DEVICE
50
DATA TRANSMISSION DEVICE
90 (COMPUTER NETWORK)

[Fig. 31]


DATA TRANSMISSION DEVICE
PORTABLE TERMINAL
DATA RECEIVING DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
CONNECTION REQUEST
CONNECTION RESPONSE
30B
TRANSMISSION REQUEST
DEVICE INFORMATION TRANSMISSION
CONNECTION RESPONSE
30C
TRANSMISSION REQUEST
DEVICE INFORMATION TRANSMISSION
CONNECTION RESPONSE
30D
TRANSMISSION REQUEST
DEVICE INFORMATION TRANSMISSION
DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
DATA TRANSMISSION

[Fig. 32]

(A) DATA RECEIVING DEVICE 30B

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	COLOR/MONOCHROMATIC
	CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A, B
	PAPER SIZE	A4, A3, LETTER, LEGAL

(B) DATA RECEIVING DEVICE 30C

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	MONOCHROMATIC
	CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A
	PAPER SIZE	A4, LETTER

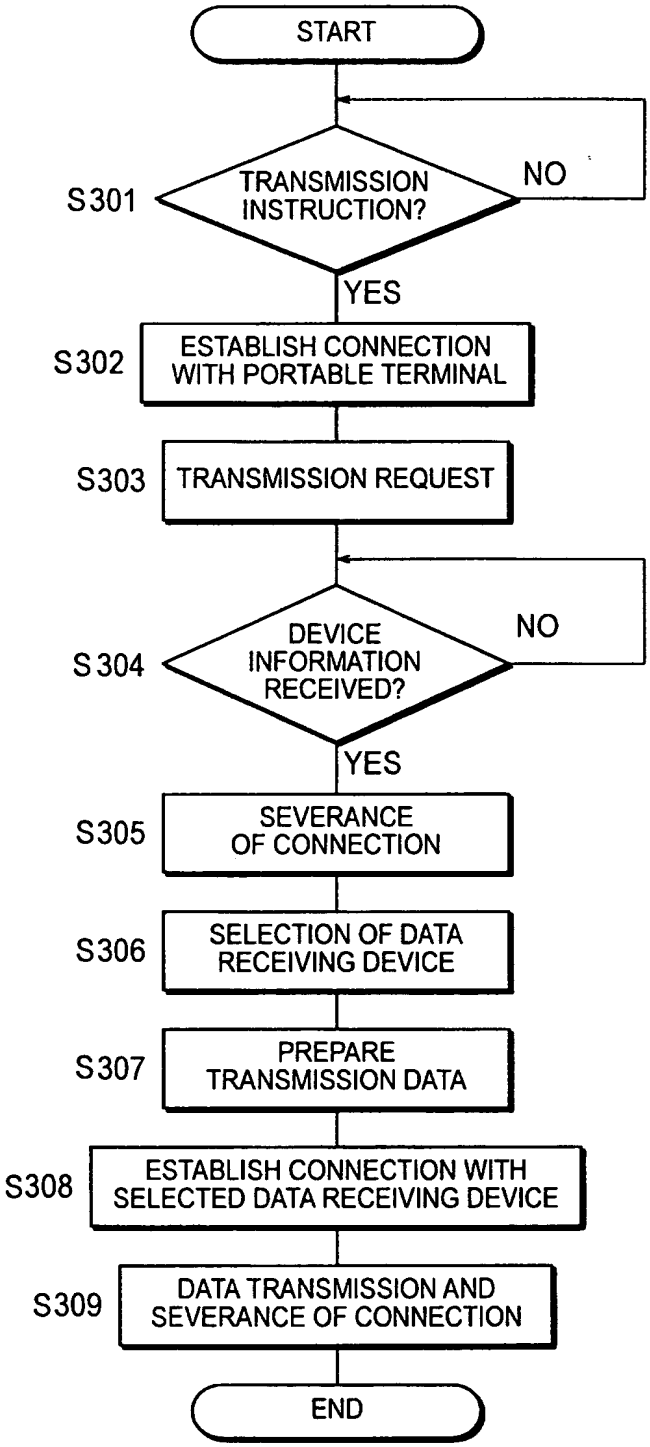
(C) DATA RECEIVING DEVICE 30D

CONNECTION INFORMATION	PROTOCOL	IFAX
	IDENTIFICATION CODE	E-MAIL ADDRESS
	DATA FORMAT	TIFF-F COMPRESSION
SPECIFICATION INFORMATION	PRINTING RESOLUTION	300 DPI
	PRINTING MODE	MONOCHROMATIC
	PAPER SIZE	A4, LETTER

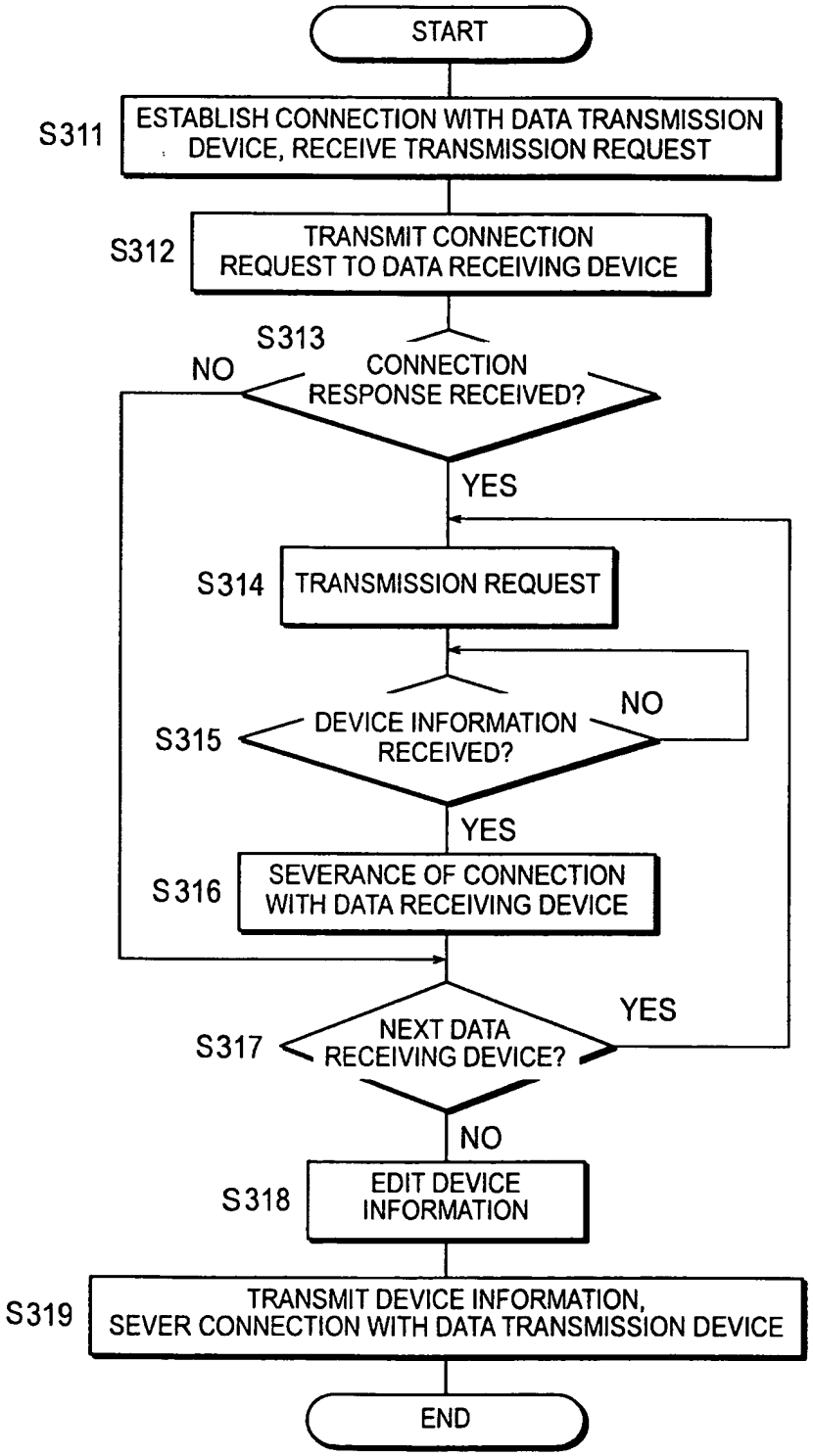
[Fig. 33]

DATA RECEIVING DEVICE 30B	CONNECTION INFORMATION	PROTOCOL	LPR
		IDENTIFICATION CODE	IP ADDRESS
	SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
		PRINTING MODE	COLOR/MONOCHROMATIC
		CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A, B
		PAPER SIZE	A4, A3, LETTER, LEGAL
DATA RECEIVING DEVICE 30C	CONNECTION INFORMATION	PROTOCOL	LPR
		IDENTIFICATION CODE	IP ADDRESS
	SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
		PRINTING MODE	MONOCHROMATIC
		CONTROL COMMAND (INCLUDING EMULATION MODE)	PAGE DESCRIPTION LANGUAGE A
		PAPER SIZE	A4, LETTER
DATA RECEIVING DEVICE 30D	CONNECTION INFORMATION	PROTOCOL	IFAX
		IDENTIFICATION CODE	E-MAIL ADDRESS
		DATA FORMAT	TIFF-F COMPRESSION
	SPECIFICATION INFORMATION	PRINTING RESOLUTION	300 DPI
		PRINTING MODE	MONOCHROMATIC
		PAPER SIZE	A4, LETTER

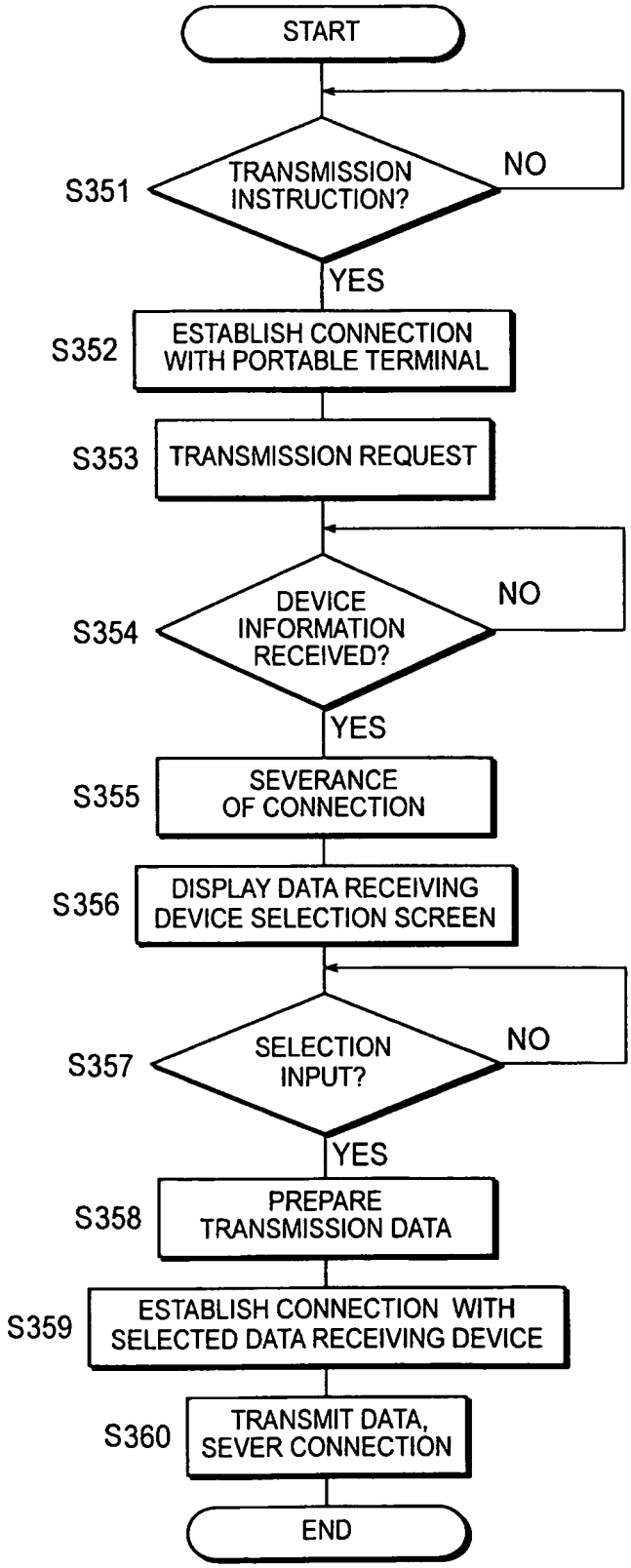
[Fig. 34]


START
S301
TRANSMISSION INSTRUCTION?
NO
YES
S302
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S303
TRANSMISSION REQUEST
S304
DEVICE INFORMATION RECEIVED?
NO
YES
S305
SEVERANCE OF CONNECTION
S306
SELECTION OF DATA RECEIVING DEVICE
S307
PREPARE TRANSMISSION DATA
S308
ESTABLISH CONNECTION WITH SELECTED DATA RECEIVING DEVICE
S309
DATA TRANSMISSION AND SEVERANCE OF CONNECTION
END

[Fig. 35]


START
S311
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE, RECEIVE TRANSMISSION REQUEST
S312
TRANSMIT CONNECTION REQUEST TO DATA RECEIVING DEVICE
S313
CONNECTION RESPONSE RECEIVED?
NO
YES
S314
TRANSMISSION REQUEST
S315
DEVICE INFORMATION RECEIVED?
NO
YES
S316
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S317
NEXT DATA RECEIVING DEVICE?
YES
NO
S318
EDIT DEVICE INFORMATION
S319
TRANSMIT DEVICE INFORMATION, SEVER CONNECTION WITH DATA TRANSMISSION DEVICE
END

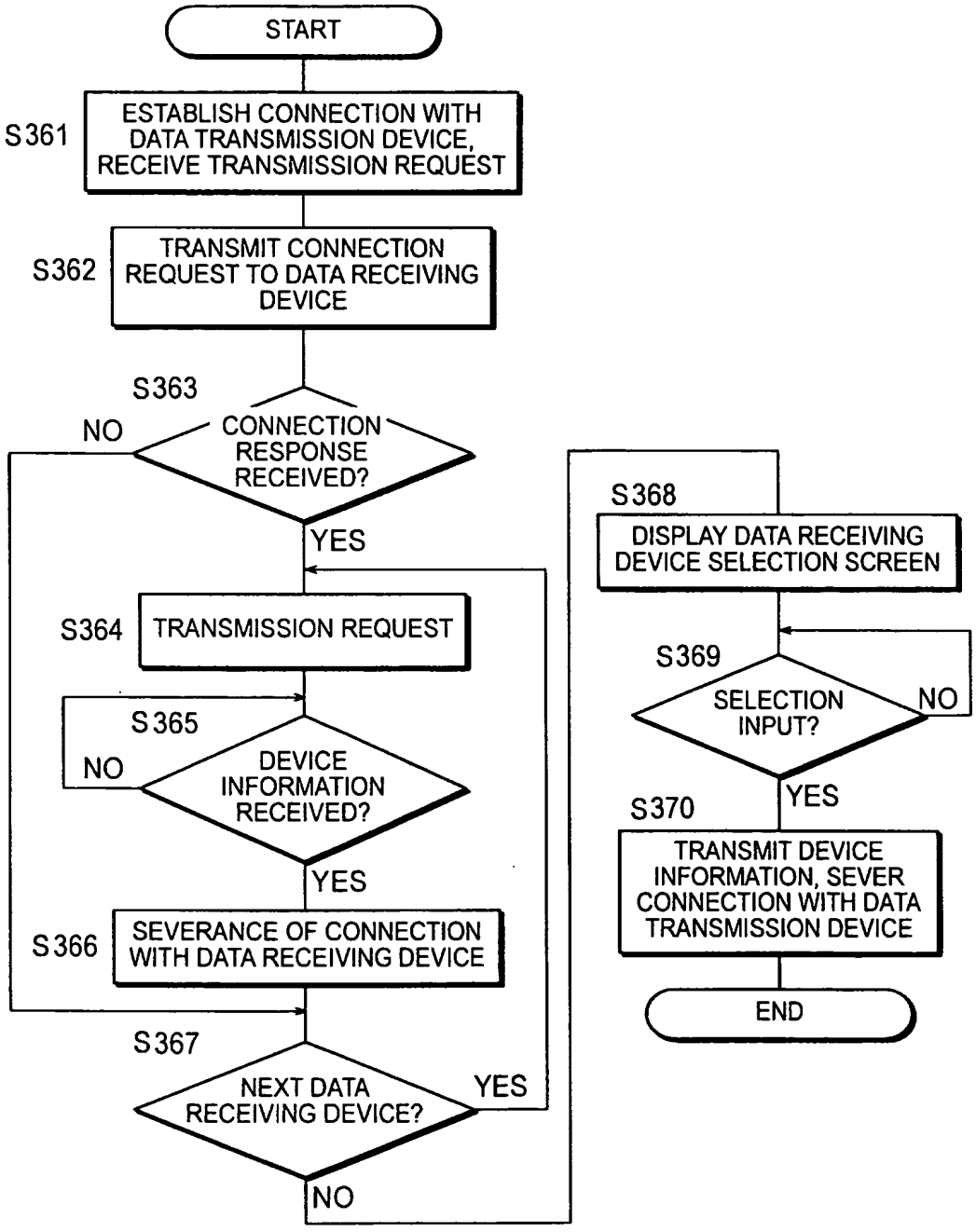
[Fig. 36]


START
S351
TRANSMISSION INSTRUCTION?
NO
YES
S352
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S353
TRANSMISSION REQUEST
S354
DEVICE INFORMATION RECEIVED?
NO
YES
S355
SEVERANCE OF CONNECTION
S356
DISPLAY DATA RECEIVING DEVICE SELECTION SCREEN
S357
SELECTION INPUT?
NO
YES
S358
PREPARE TRANSMISSION DATA
S359
ESTABLISH CONNECTION WITH SELECTED DATA RECEIVING DEVICE
S360
TRANSMIT DATA, SEVER CONNECTION
END

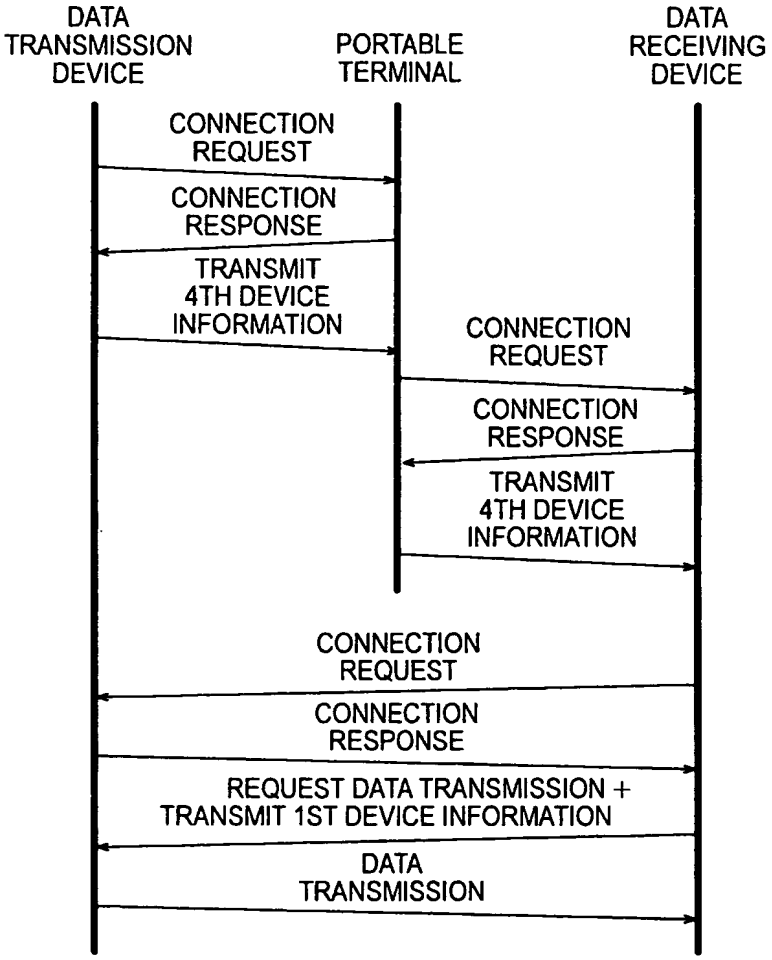
[Fig. 37]

DESTINATION DEVICE	TRANSMISSION FORMAT
DEVICE 30B	COLOR/MONOCHROMATIC PRINTING (600 DPI)
DEVICE 30C	MONOCHROMATIC PRINTING (600 DPI)
DEVICE 30D	MONOCHROMATIC PRINTING (300 DPI)

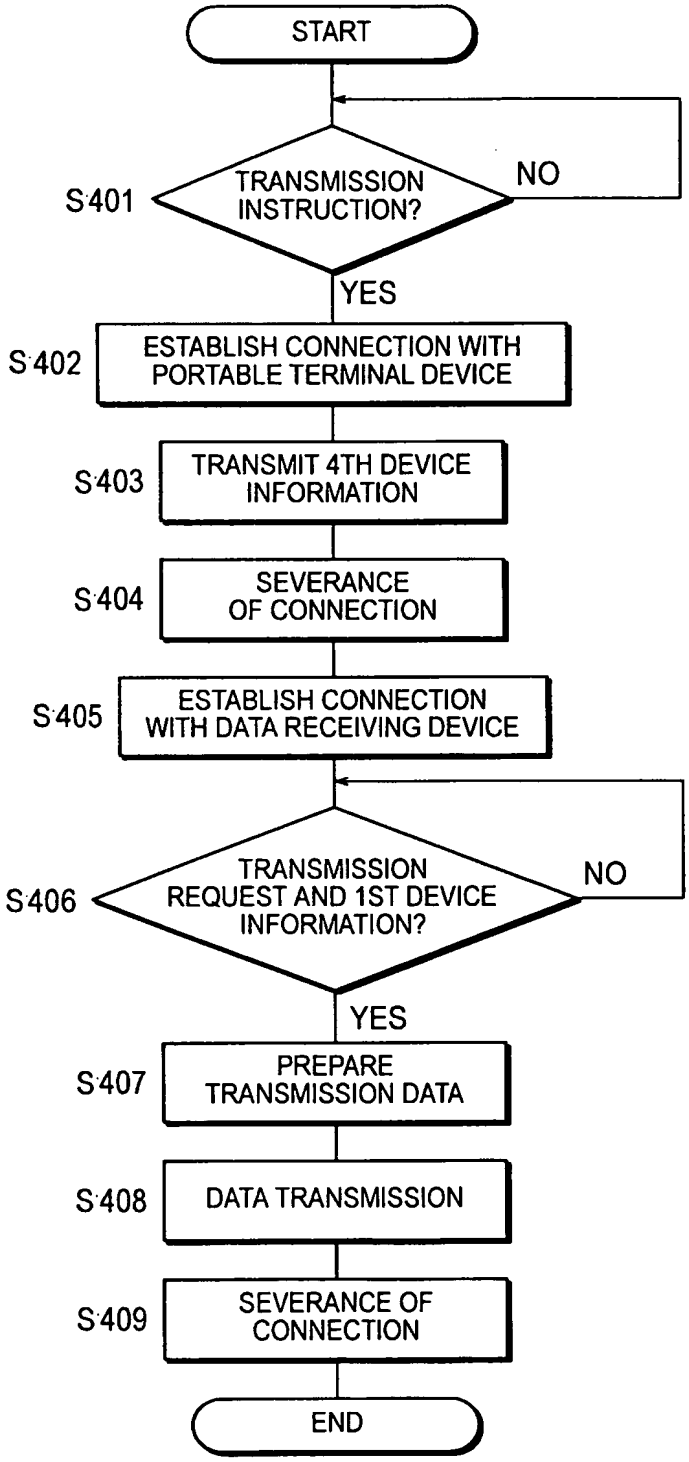
[Fig. 38]


START
S361
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE, RECEIVE TRANSMISSION REQUEST
S362
TRANSMIT CONNECTION REQUEST TO DATA RECEIVING DEVICE
S363
CONNECTION RESPONSE RECEIVED?
NO
YES
S364
TRANSMISSION REQUEST
S365
DEVICE INFORMATION RECEIVED?
NO
YES
S366
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S367
NEXT DATA RECEIVING DEVICE?
YES
NO
S368
DISPLAY DATA RECEIVING DEVICE SELECTION SCREEN
S369
SELECTION INPUT?
NO
YES
S370
TRANSMIT DEVICE INFORMATION, SEVER CONNECTION WITH DATA TRANSMISSION DEVICE
END

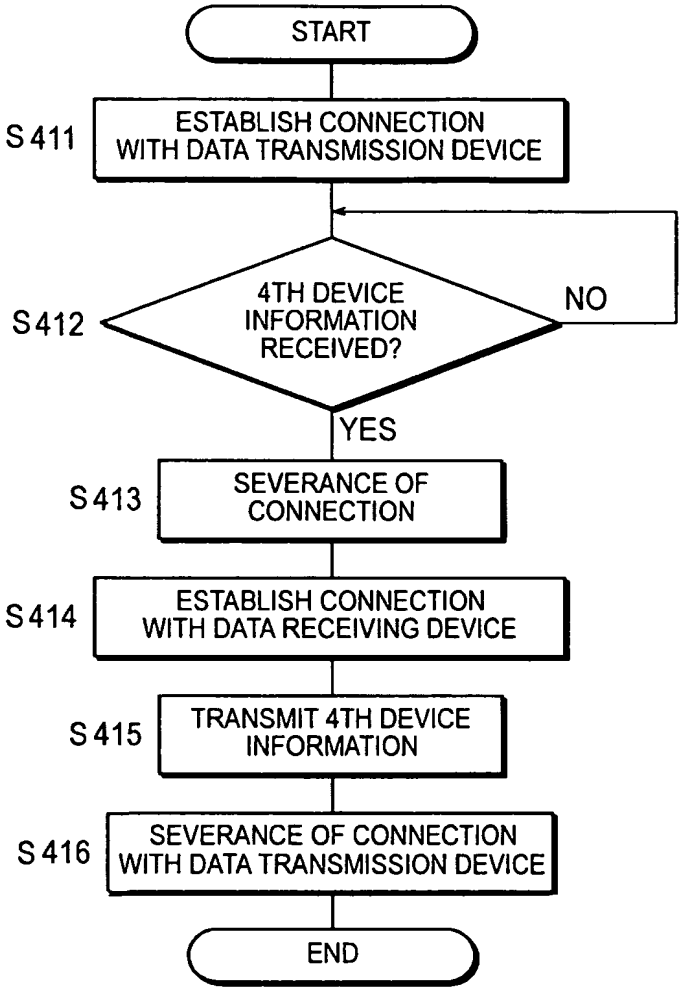
[Fig. 39]


DATA TRANSMISSION DEVICE
PORTABLE TERMINAL
DATA RECEIVING DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMIT 4TH DEVICE INFORMATION
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMIT 4TH DEVICE INFORMATION
CONNECTION REQUEST
CONNECTION RESPONSE
REQUEST DATA TRANSMISSION + TRANSMIT 1ST DEVICE INFORMATION
DATA TRANSMISSION

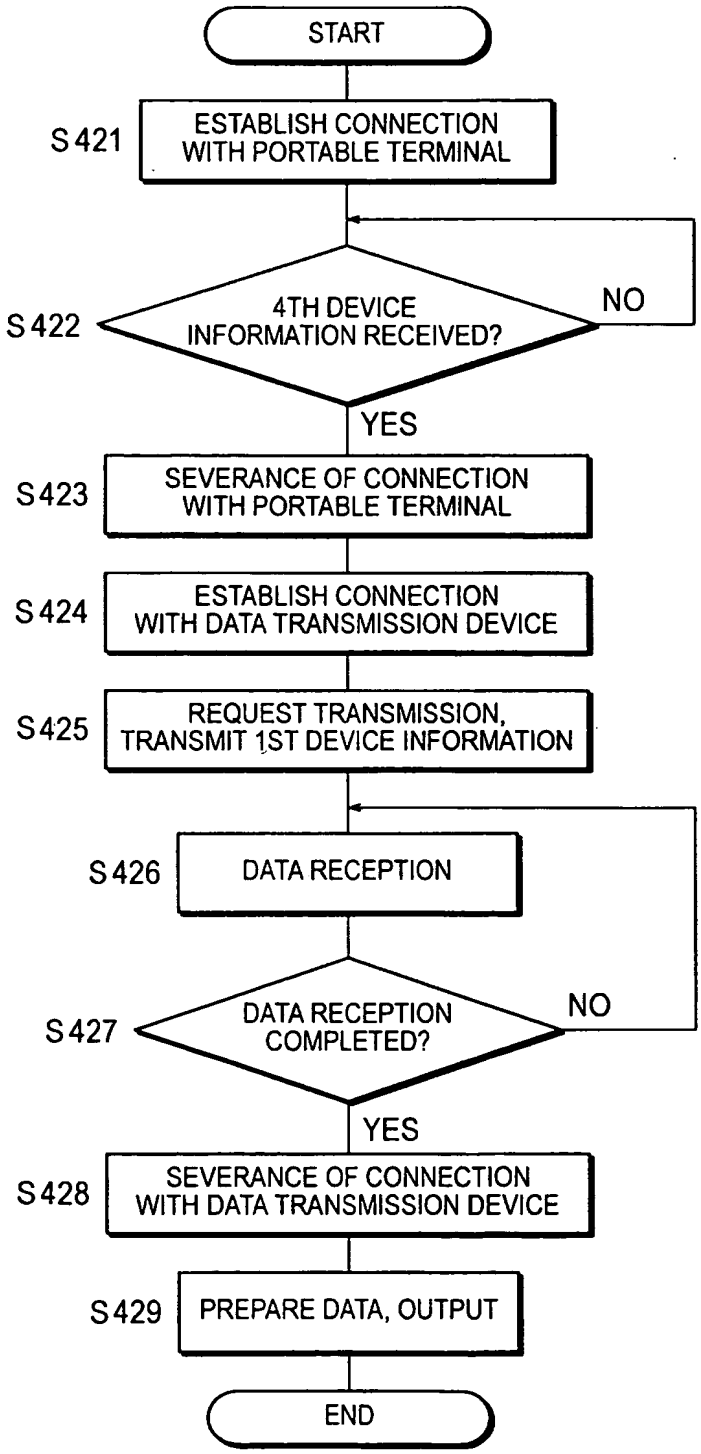
[Fig. 40]


START
S401
TRANSMISSION INSTRUCTION?
NO
YES
S402
ESTABLISH CONNECTION WITH PORTABLE TERMINAL DEVICE
S403
TRANSMIT 4TH DEVICE INFORMATION
S404
SEVERANCE OF CONNECTION
S405
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S406
TRANSMISSION REQUEST AND 1ST DEVICE INFORMATION?
NO
YES
S407
PREPARE TRANSMISSION DATA
S408
DATA TRANSMISSION
S409
SEVERANCE OF CONNECTION
END

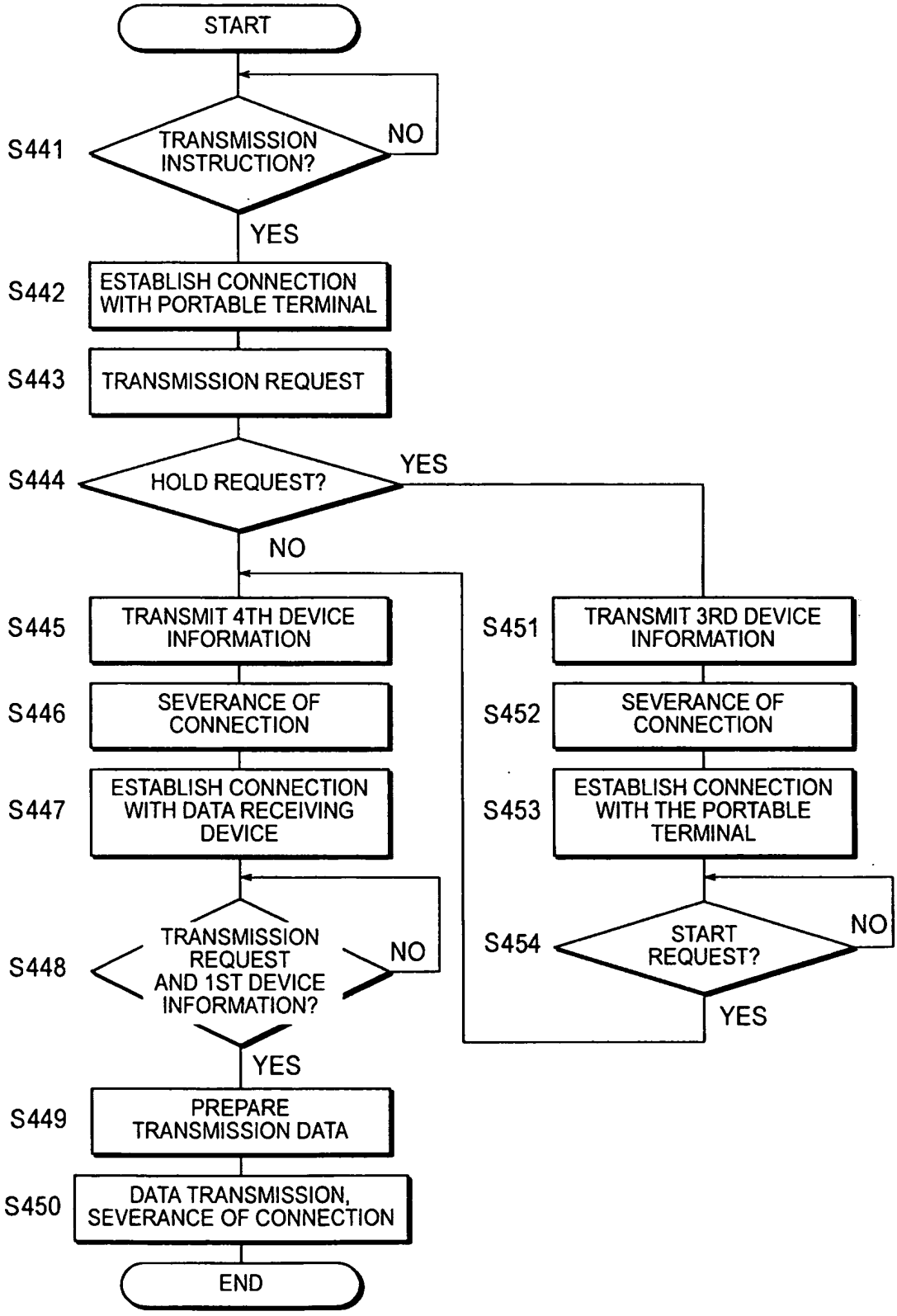
[Fig. 41]


START
S411
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S412
4TH DEVICE INFORMATION RECEIVED?
NO
YES
S413
SEVERANCE OF CONNECTION
S414
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S415
TRANSMIT 4TH DEVICE INFORMATION
S416
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

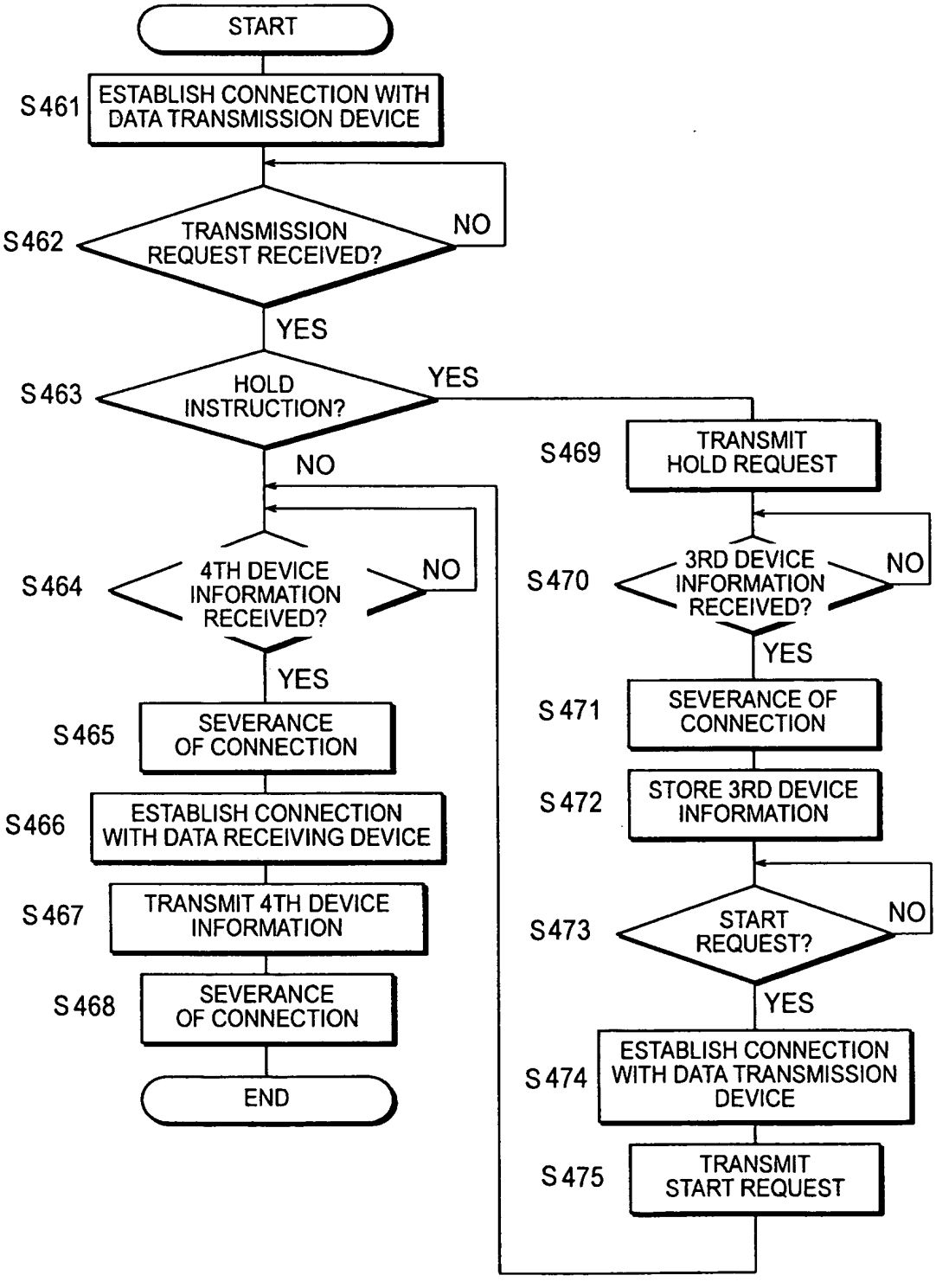
[Fig. 42]


START
S421
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S422
4TH DEVICE INFORMATION RECEIVED?
NO
YES
S423
SEVERANCE OF CONNECTION WITH PORTABLE TERMINAL
S424
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S425
REQUEST TRANSMISSION, TRANSMIT 1ST DEVICE INFORMATION
S426
DATA RECEPTION
S427
DATA RECEPTION COMPLETED?
NO
YES
S428
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
S429
PREPARE DATA, OUTPUT
END

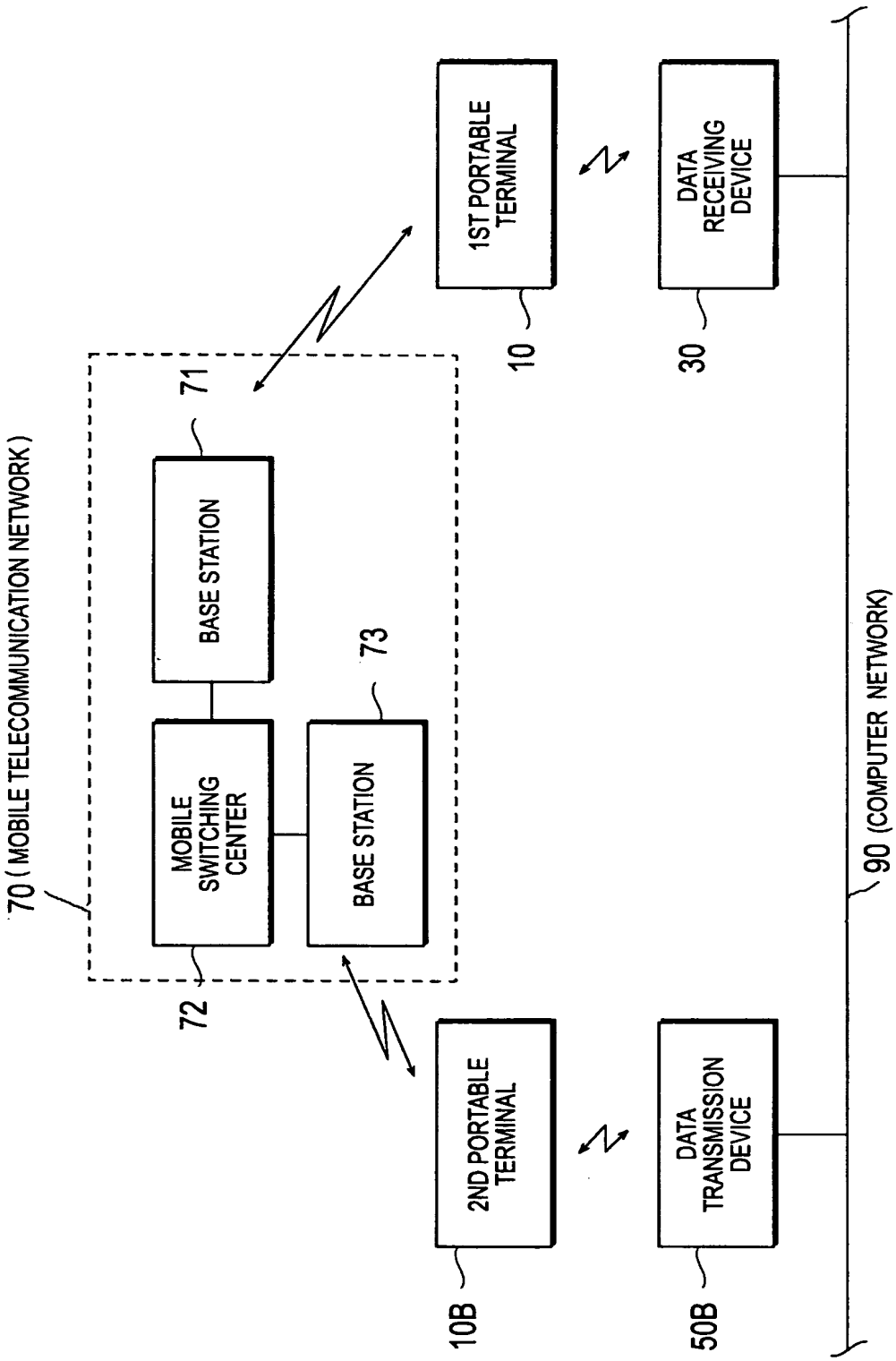
[Fig. 43]


START
S441
TRANSMISSION INSTRUCTION?
NO
YES
S442
ESTABLISH CONNECTION WITH PORTABLE TERMINAL
S443
TRANSMISSION REQUEST
S444
HOLD REQUEST?
YES
NO
S445
TRANSMIT 4TH DEVICE INFORMATION
S446
SEVERANCE OF CONNECTION
S447
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S448
TRANSMISSION REQUEST AND 1ST DEVICE INFORMATION?
NO
YES
S449
PREPARE TRANSMISSION DATA
S450
DATA TRANSMISSION, SEVERANCE OF CONNECTION
END
S451
TRANSMIT 3RD DEVICE INFORMATION
S452
SEVERANCE OF CONNECTION
S453
ESTABLISH CONNECTION WITH THE PORTABLE TERMINAL
S454
START REQUEST?
NO
YES

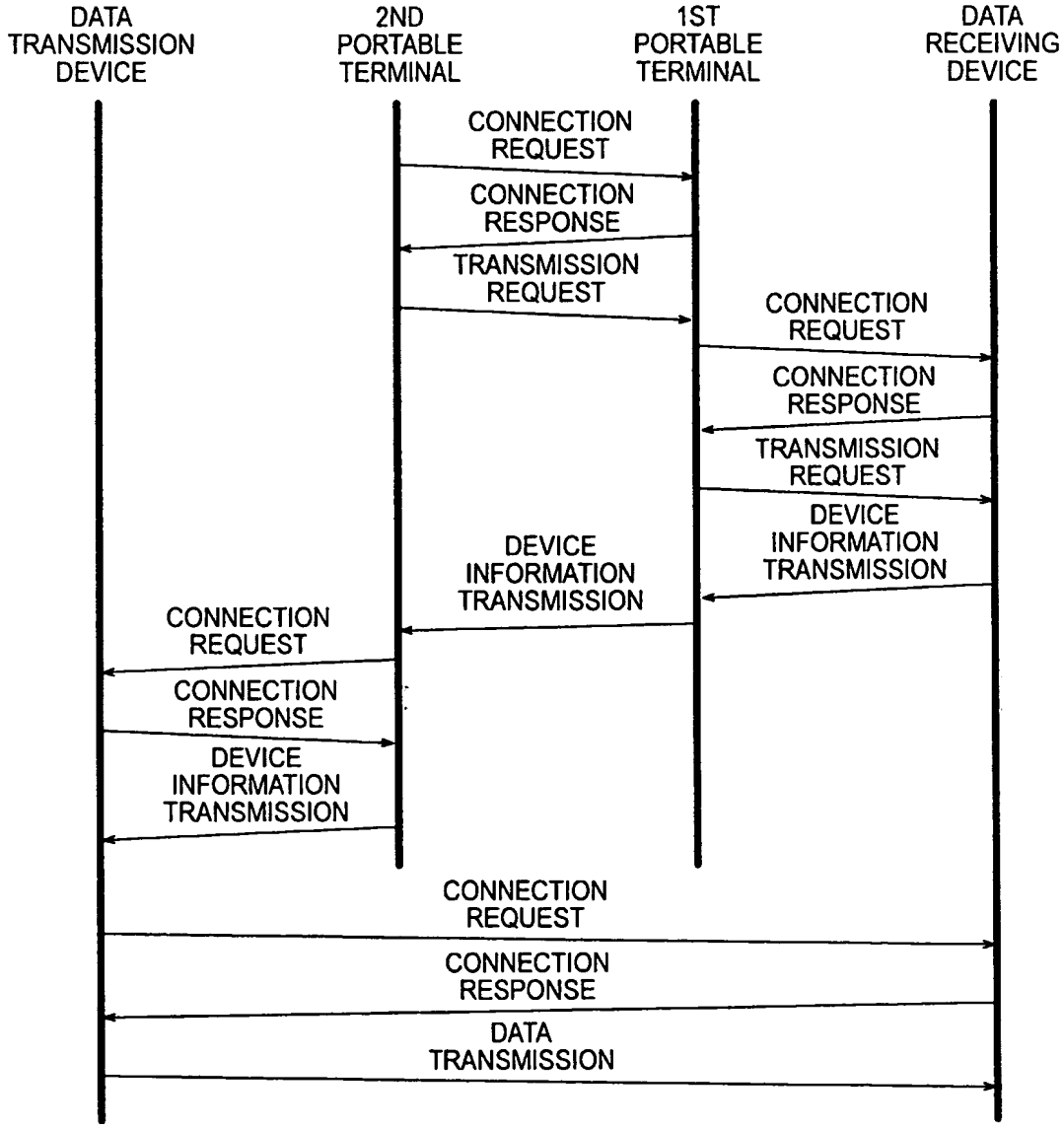
[Fig. 44]


START
S461
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S462
TRANSMISSION REQUEST RECEIVED?
NO
YES
S463
HOLD INSTRUCTION?
YES
NO
S469
TRANSMIT HOLD REQUEST
S464
4TH DEVICE INFORMATION RECEIVED?
NO
YES
S470
3RD DEVICE INFORMATION RECEIVED?
NO
YES
S465
SEVERANCE OF CONNECTION
S471
SEVERANCE OF CONNECTION
S466
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S472
STORE 3RD DEVICE INFORMATION
S467
TRANSMIT 4TH DEVICE INFORMATION
S473
START REQUEST?
NO
YES
S468
SEVERANCE OF CONNECTION
S474
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S475
TRANSMIT START REQUEST
END

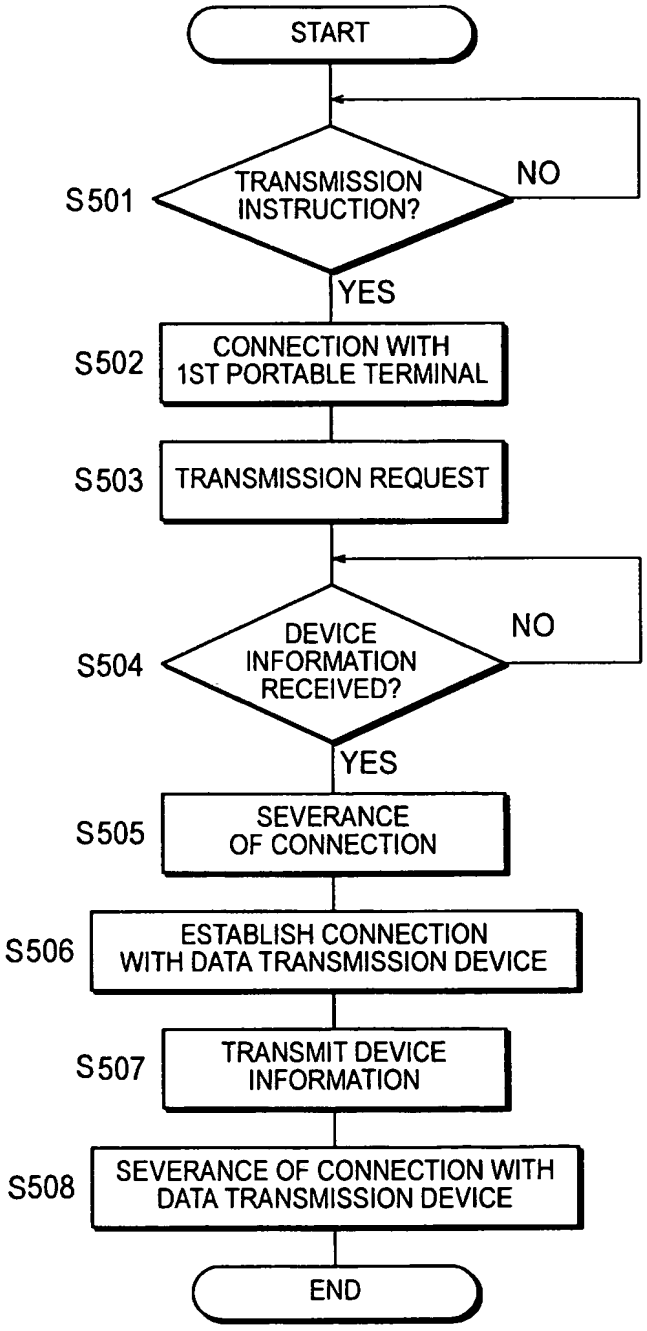
[Fig. 45]


70 (MOBILE TELECOMMUNICATION NETWORK)
71
BASE STATION
MOBILE SWITCHING CENTER
72
73
BASE STATION
1ST PORTABLE TERMINAL
10
2ND PORTABLE TERMINAL
10B
DATA RECEIVING DEVICE
30
DATA TRANSMISSION DEVICE
50B
90 (COMPUTER NETWORK)

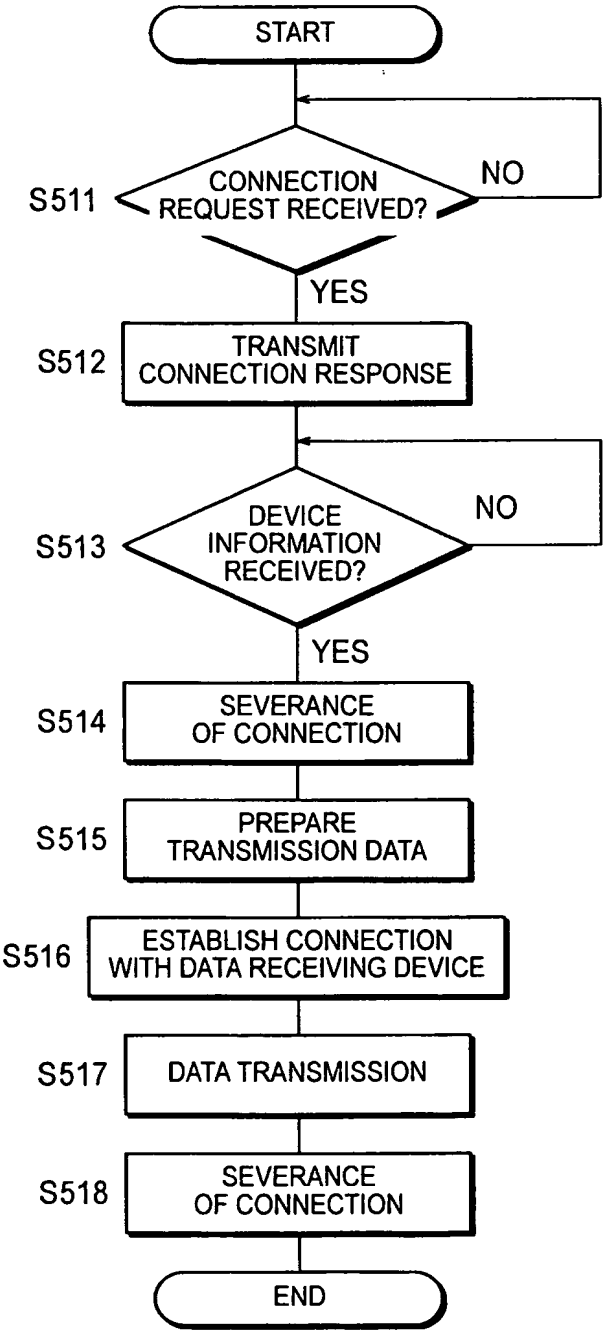
[Fig. 46]


DATA TRANSMISSION DEVICE
2ND PORTABLE TERMINAL
1ST PORTABLE TERMINAL
DATA RECEIVING DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
DEVICE INFORMATION TRANSMISSION
DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
DATA TRANSMISSION

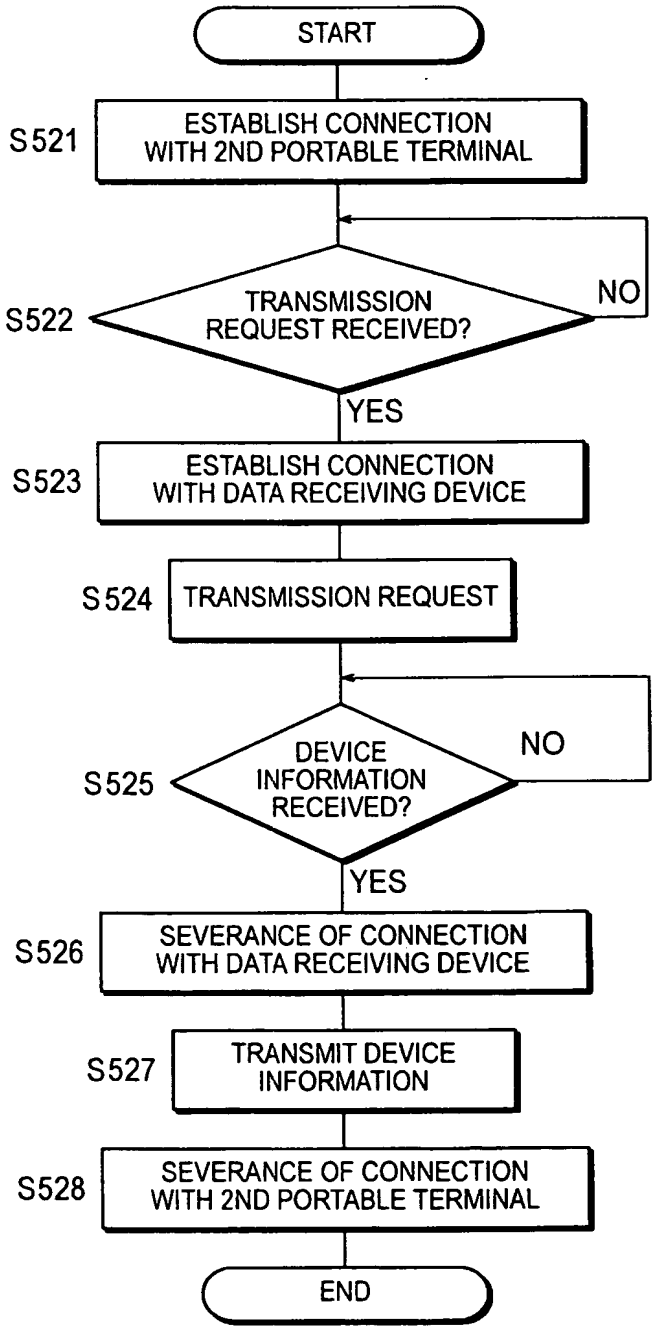
[Fig. 47]


START
S501
TRANSMISSION INSTRUCTION?
NO
YES
S502
CONNECTION WITH 1ST PORTABLE TERMINAL
S503
TRANSMISSION REQUEST
S504
DEVICE INFORMATION RECEIVED?
NO
YES
S505
SEVERANCE OF CONNECTION
S506
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S507
TRANSMIT DEVICE INFORMATION
S508
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

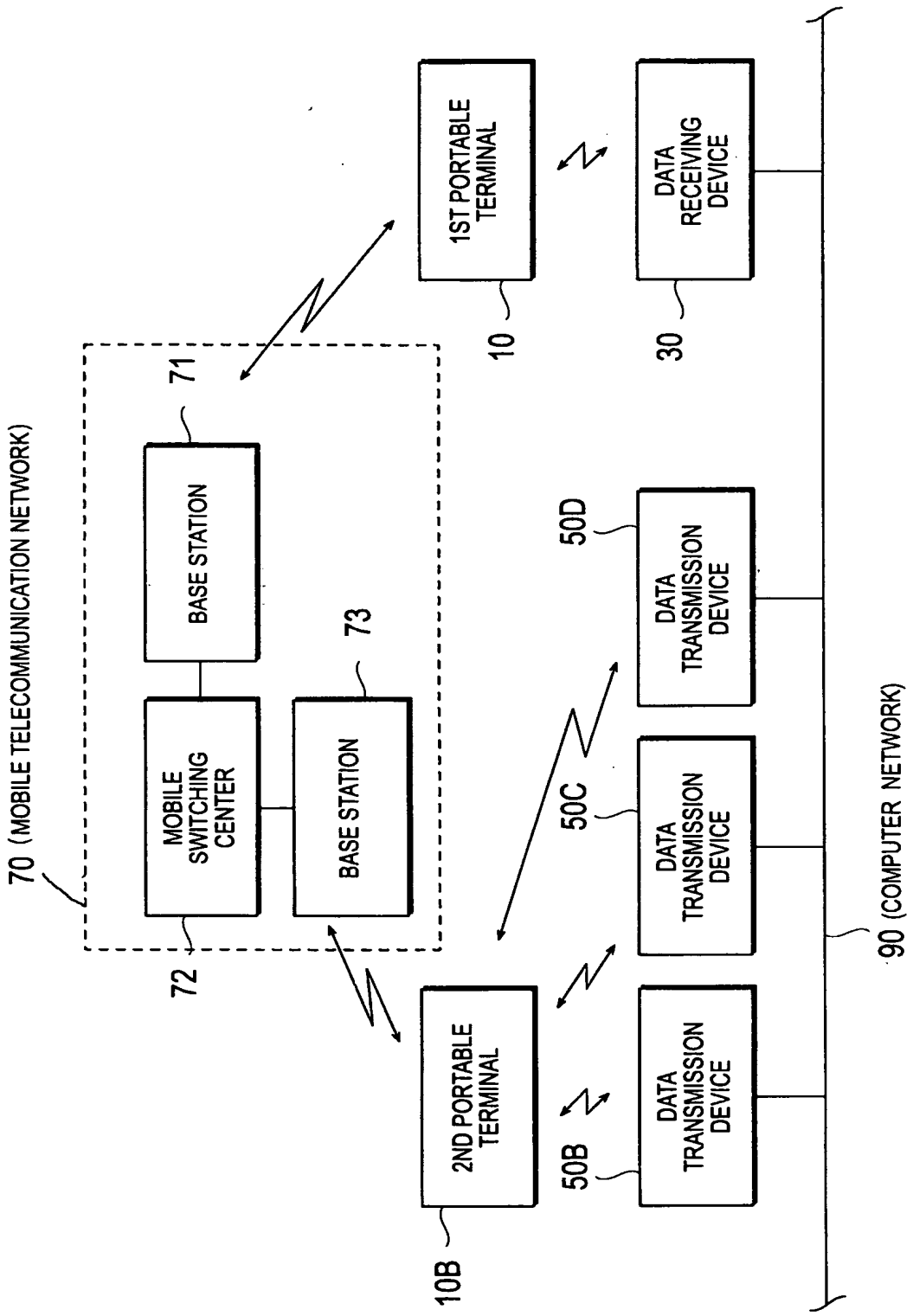
[Fig. 48]


START
S511
CONNECTION REQUEST RECEIVED?
NO
YES
S512
TRANSMIT CONNECTION RESPONSE
S513
DEVICE INFORMATION RECEIVED?
NO
YES
S514
SEVERANCE OF CONNECTION
S515
PREPARE TRANSMISSION DATA
S516
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S517
DATA TRANSMISSION
S518
SEVERANCE OF CONNECTION
END

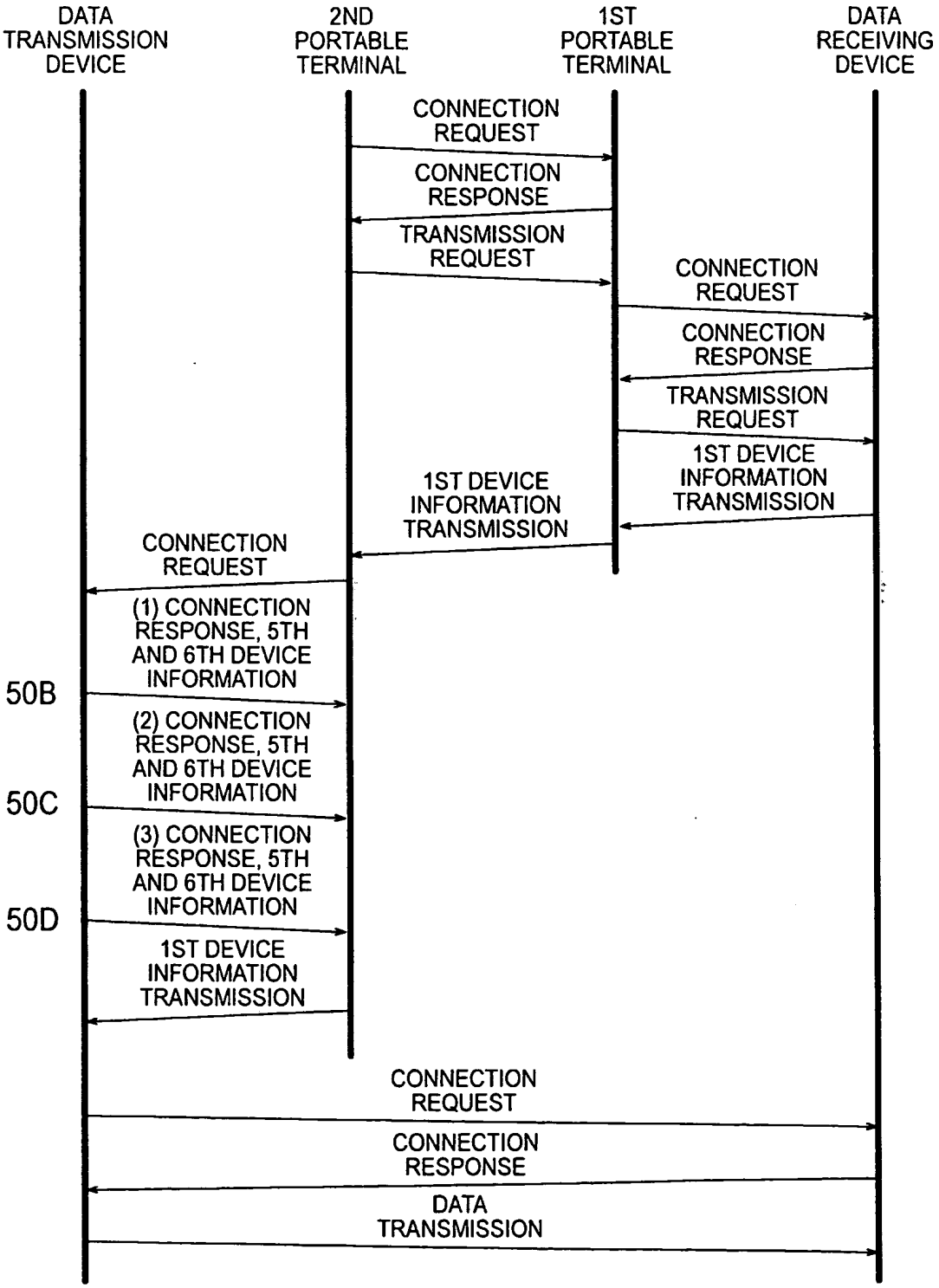
[Fig. 49]


START
S521
ESTABLISH CONNECTION WITH 2ND PORTABLE TERMINAL
S522
TRANSMISSION REQUEST RECEIVED?
NO
YES
S523
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S524
TRANSMISSION REQUEST
S525
DEVICE INFORMATION RECEIVED?
NO
YES
S526
SEVERANCE OF CONNECTION WITH DATA RECEIVING DEVICE
S527
TRANSMIT DEVICE INFORMATION
S528
SEVERANCE OF CONNECTION WITH 2ND PORTABLE TERMINAL
END

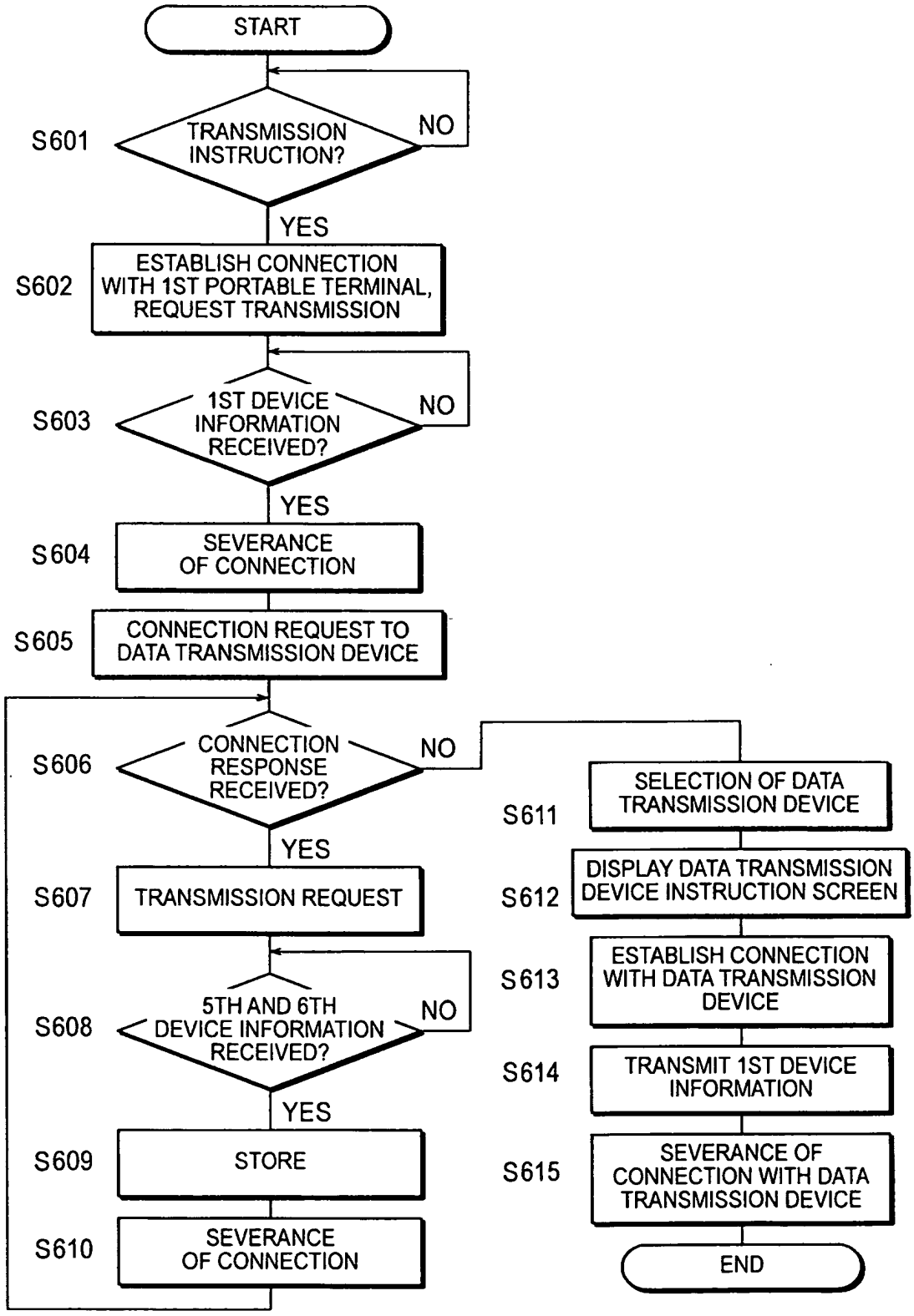
[Fig. 50]


70 (MOBILE TELECOMMUNICATION NETWORK)
71
BASE STATION
MOBILE SWITCHING CENTER
72
73
BASE STATION
1ST PORTABLE TERMINAL
10
2ND PORTABLE TERMINAL
10B
DATA RECEIVING DEVICE
30
50D
DATA TRANSMISSION DEVICE
50C
DATA TRANSMISSION DEVICE
50B
DATA TRANSMISSION DEVICE
90 (COMPUTER NETWORK)

[Fig. 51]


DATA TRANSMISSION DEVICE
2ND PORTABLE TERMINAL
1ST PORTABLE TERMINAL
DATA RECEIVING DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
1ST DEVICE INFORMATION TRANSMISSION
1ST DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
(1) CONNECTION RESPONSE, 5TH AND 6TH DEVICE INFORMATION
50B
(2) CONNECTION RESPONSE, 5TH AND 6TH DEVICE INFORMATION
50C
(3) CONNECTION RESPONSE, 5TH AND 6TH DEVICE INFORMATION
50D
1ST DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
DATA TRANSMISSION

[Fig. 52]


START
S601
TRANSMISSION INSTRUCTION?
NO
YES
S602
ESTABLISH CONNECTION WITH 1ST PORTABLE TERMINAL, REQUEST TRANSMISSION
S603
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S604
SEVERANCE OF CONNECTION
S605
CONNECTION REQUEST TO DATA TRANSMISSION DEVICE
S606
CONNECTION RESPONSE RECEIVED?
NO
YES
S607
TRANSMISSION REQUEST
S608
5TH AND 6TH DEVICE INFORMATION RECEIVED?
NO
YES
S609
STORE
S610
SEVERANCE OF CONNECTION
S611
SELECTION OF DATA TRANSMISSION DEVICE
S612
DISPLAY DATA TRANSMISSION DEVICE INSTRUCTION SCREEN
S613
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S614
TRANSMIT 1ST DEVICE INFORMATION
S615
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

[Fig. 53]

(A) DATA TRANSMISSION DEVICE 50B

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	COLOR/MONOCHROMATIC
	CONTROL COMMAND	PAGE DESCRIPTION LANGUAGE A, B
	PAPER SIZE	A4, A3, LETTER, LEGAL

(B) DATA TRANSMISSION DEVICE 50C

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	MONOCHROMATIC
	CONTROL COMMAND	PAGE DESCRIPTION LANGUAGE A
	PAPER SIZE	A4, LETTER

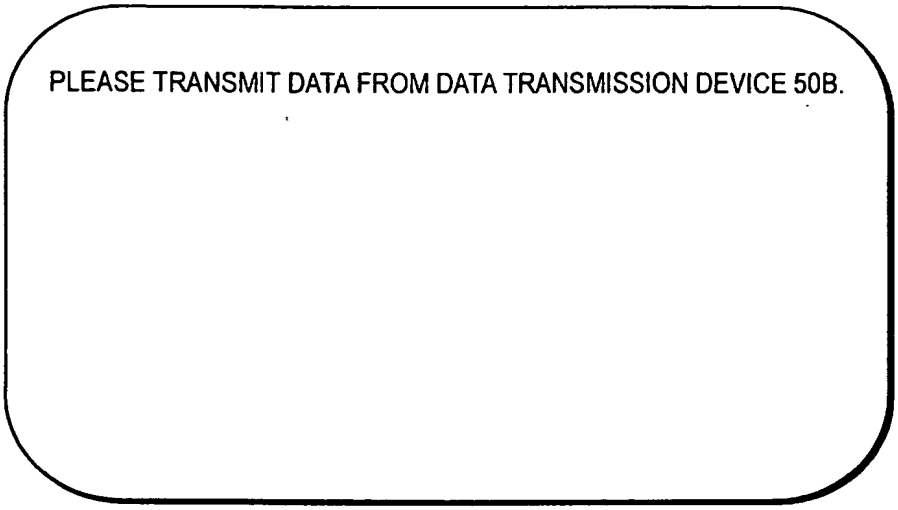
(C) DATA TRANSMISSION DEVICE 50D

CONNECTION INFORMATION	PROTOCOL	IFAX
	IDENTIFICATION CODE	E-MAIL ADDRESS
	DATA FORMAT	TIFF-F COMPRESSION
SPECIFICATION INFORMATION	PRINTING RESOLUTION	300 DPI
	PRINTING MODE	MONOCHROMATIC
	PAPER SIZE	A4, LETTER

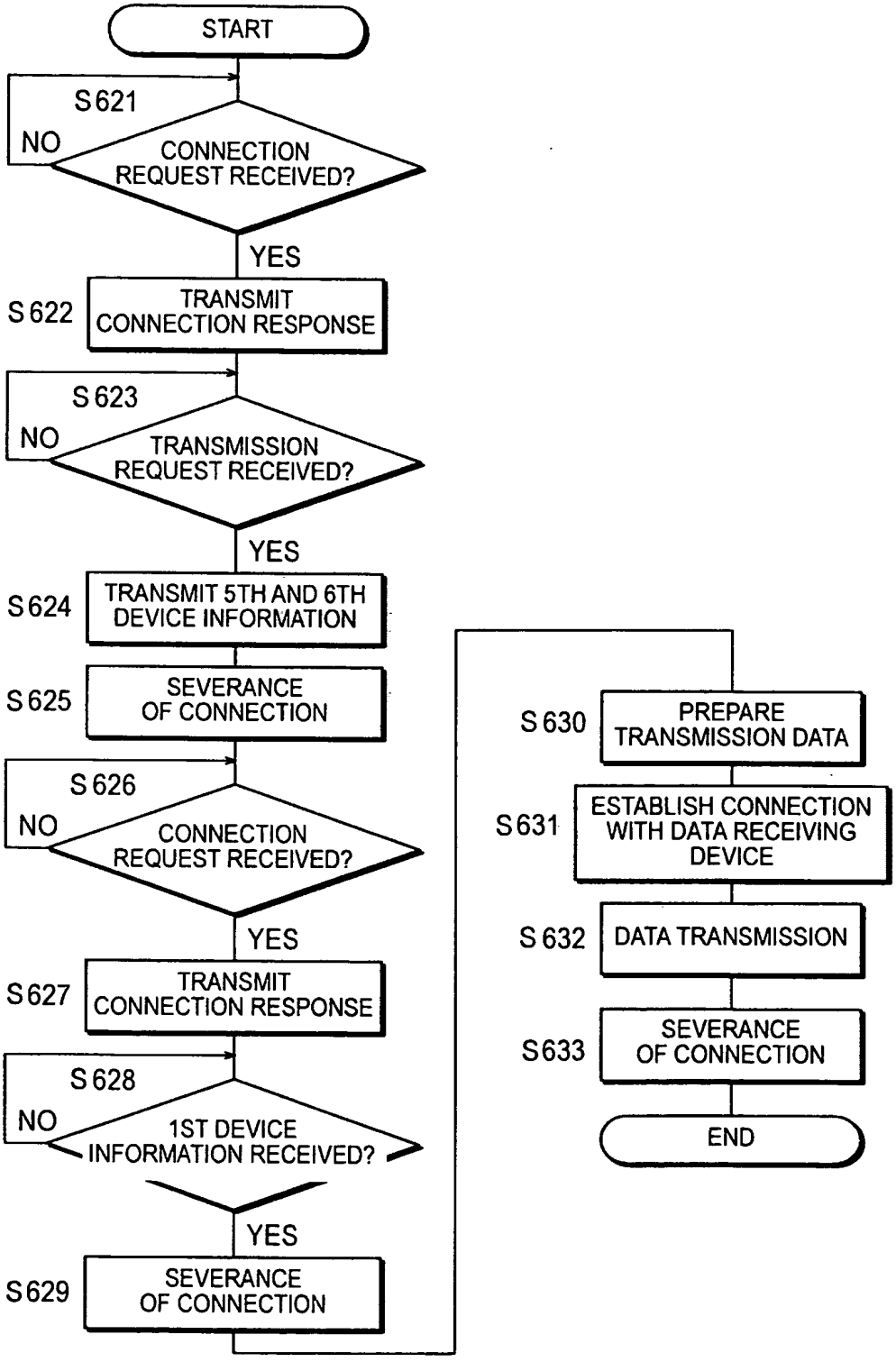
(D) DATA RECEIVING DEVICE 30

CONNECTION INFORMATION	PROTOCOL	LPR
	IDENTIFICATION CODE	IP ADDRESS
SPECIFICATION INFORMATION	PRINTING RESOLUTION	600 DPI
	PRINTING MODE	COLOR/MONOCHROMATIC
	CONTROL COMMAND	PAGE DESCRIPTION LANGUAGE A, B
	PAPER SIZE	A4, A3, LETTER, LEGAL

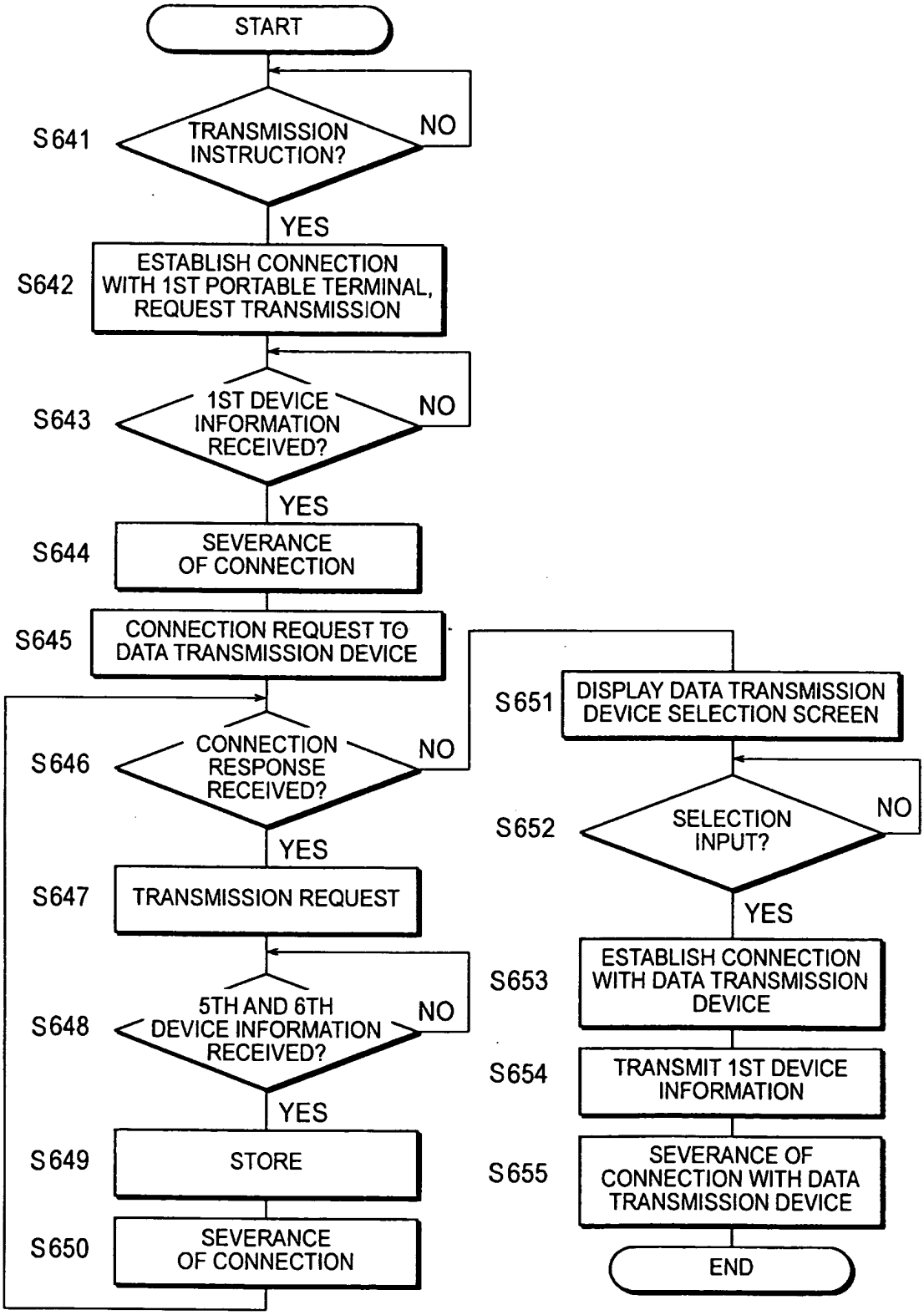
[Fig. 54]



[Fig. 55]


START
S621
NO
CONNECTION REQUEST RECEIVED?
YES
S622
TRANSMIT CONNECTION RESPONSE
S623
NO
TRANSMISSION REQUEST RECEIVED?
YES
S624
TRANSMIT 5TH AND 6TH DEVICE INFORMATION
S625
SEVERANCE OF CONNECTION
S626
NO
CONNECTION REQUEST RECEIVED?
YES
S627
TRANSMIT CONNECTION RESPONSE
S628
NO
1ST DEVICE INFORMATION RECEIVED?
YES
S629
SEVERANCE OF CONNECTION
S630
PREPARE TRANSMISSION DATA
S631
ESTABLISH CONNECTION WITH DATA RECEIVING DEVICE
S632
DATA TRANSMISSION
S633
SEVERANCE OF CONNECTION
END

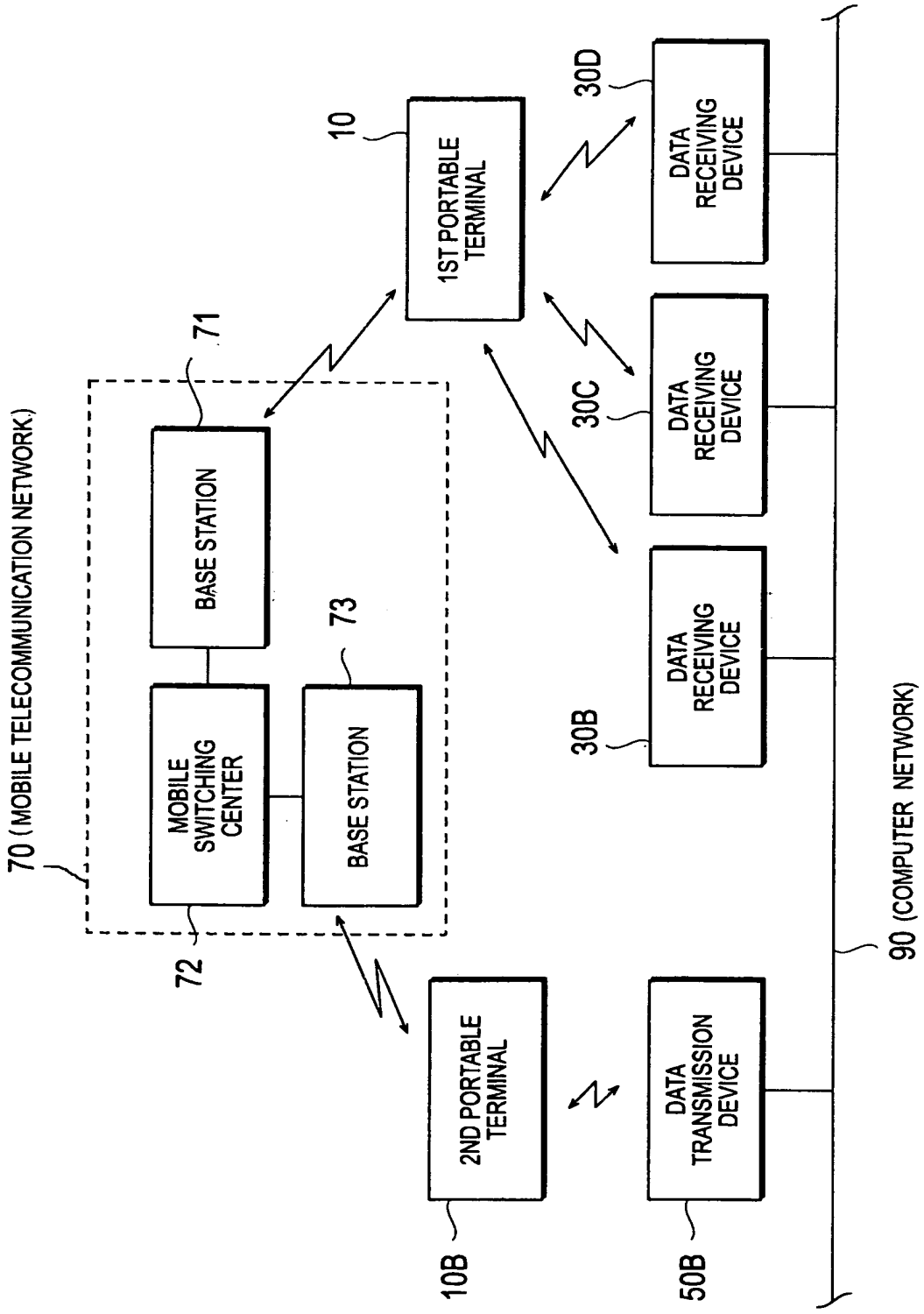
[Fig. 56]


START
S641
TRANSMISSION INSTRUCTION?
NO
YES
S642
ESTABLISH CONNECTION WITH 1ST PORTABLE TERMINAL, REQUEST TRANSMISSION
S643
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S644
SEVERANCE OF CONNECTION
S645
CONNECTION REQUEST TO DATA TRANSMISSION DEVICE
S646
CONNECTION RESPONSE RECEIVED?
NO
YES
S647
TRANSMISSION REQUEST
S648
5TH AND 6TH DEVICE INFORMATION RECEIVED?
NO
YES
S649
STORE
S650
SEVERANCE OF CONNECTION
S651
DISPLAY DATA TRANSMISSION DEVICE SELECTION SCREEN
S652
SELECTION INPUT?
NO
YES
S653
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S654
TRANSMIT 1ST DEVICE INFORMATION
S655
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

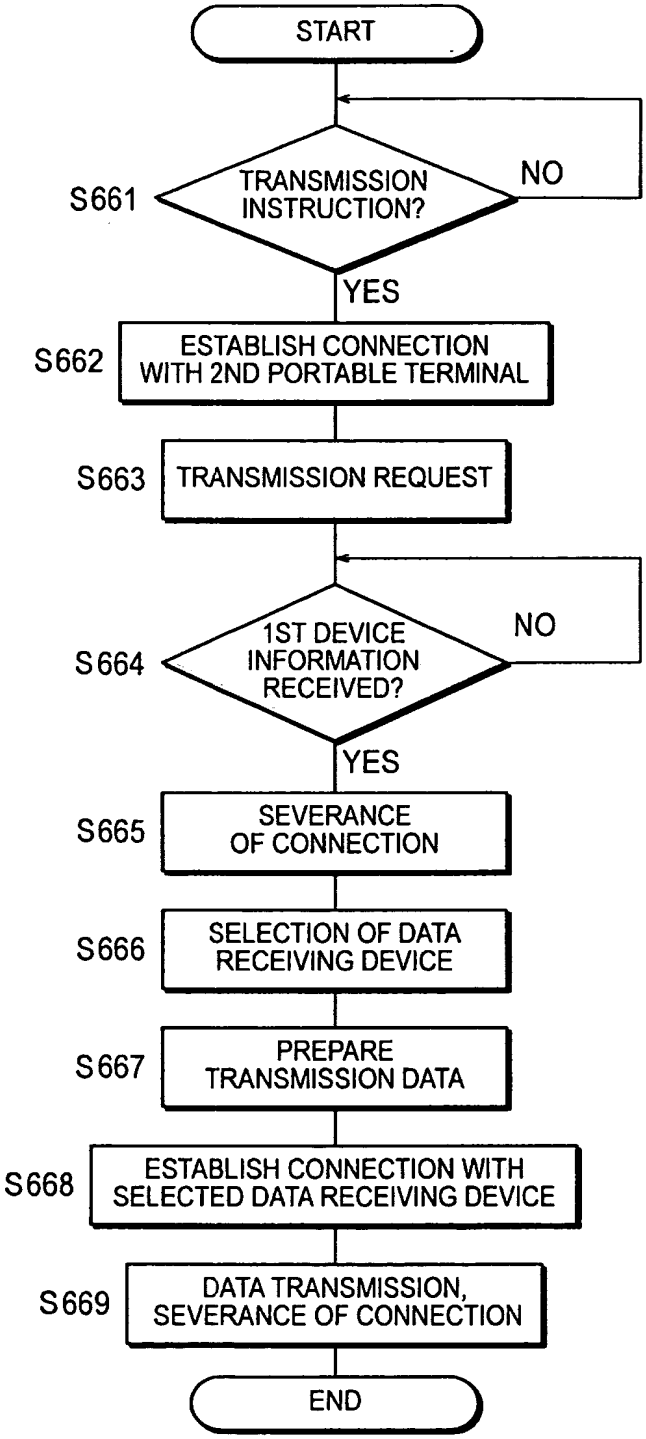
[Fig. 57]

SOURCE DEVICE	TRANSMISSION FORMAT
DEVICE 50B	COLOR/MONOCHROMATIC PRINTING (600 DPI)
DEVICE 50C	MONOCHROMATIC PRINTING (600 DPI)
DEVICE 50D	MONOCHROMATIC PRINTING (300 DPI)

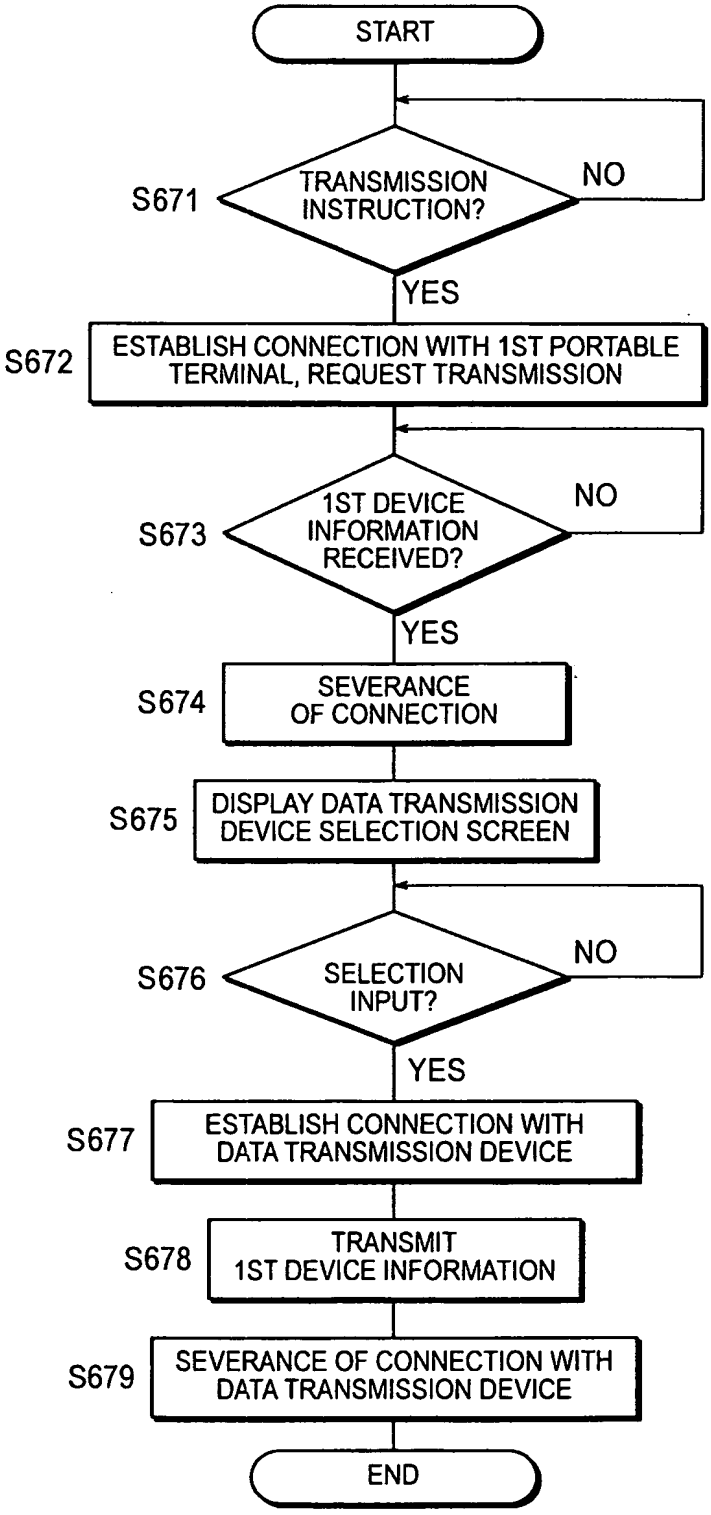
[Fig. 58]


70 (MOBILE TELECOMMUNICATION NETWORK)
71
BASE STATION
MOBILE SWITCHING CENTER
73
BASE STATION
72
10
1ST PORTABLE TERMINAL
30D
DATA RECEIVING DEVICE
30C
DATA RECEIVING DEVICE
30B
DATA RECEIVING DEVICE
2ND PORTABLE TERMINAL
10B
DATA TRANSMISSION DEVICE
50B
90 (COMPUTER NETWORK)

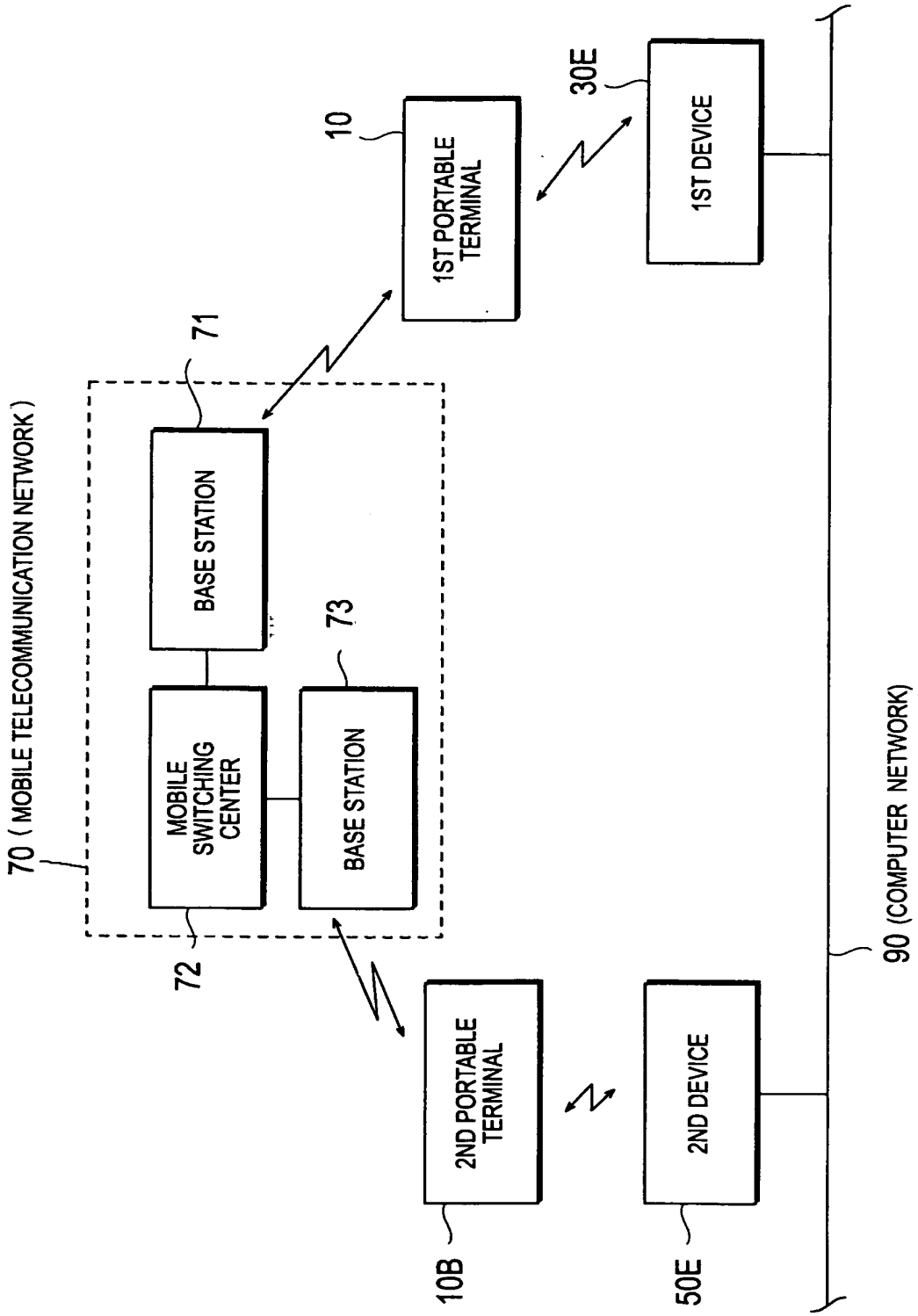
[Fig. 59]


START
S661
TRANSMISSION INSTRUCTION?
NO
YES
S662
ESTABLISH CONNECTION WITH 2ND PORTABLE TERMINAL
S663
TRANSMISSION REQUEST
S664
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S665
SEVERANCE OF CONNECTION
S666
SELECTION OF DATA RECEIVING DEVICE
S667
PREPARE TRANSMISSION DATA
S668
ESTABLISH CONNECTION WITH SELECTED DATA RECEIVING DEVICE
S669
DATA TRANSMISSION, SEVERANCE OF CONNECTION
END

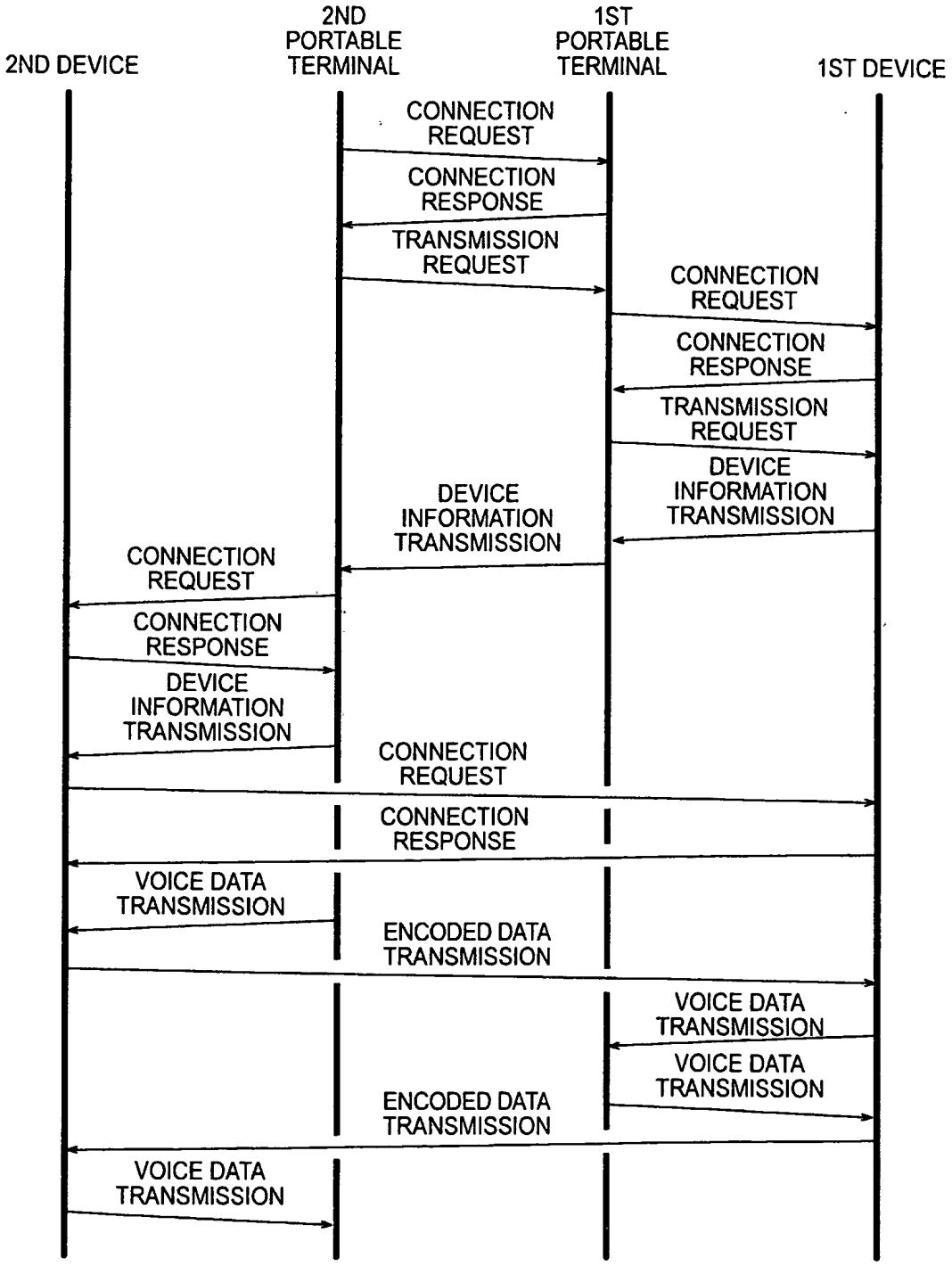
[Fig. 60]


START
S671
TRANSMISSION INSTRUCTION?
NO
YES
S672
ESTABLISH CONNECTION WITH 1ST PORTABLE TERMINAL, REQUEST TRANSMISSION
S673
1ST DEVICE INFORMATION RECEIVED?
NO
YES
S674
SEVERANCE OF CONNECTION
S675
DISPLAY DATA TRANSMISSION DEVICE SELECTION SCREEN
S676
SELECTION INPUT?
NO
YES
S677
ESTABLISH CONNECTION WITH DATA TRANSMISSION DEVICE
S678
TRANSMIT 1ST DEVICE INFORMATION
S679
SEVERANCE OF CONNECTION WITH DATA TRANSMISSION DEVICE
END

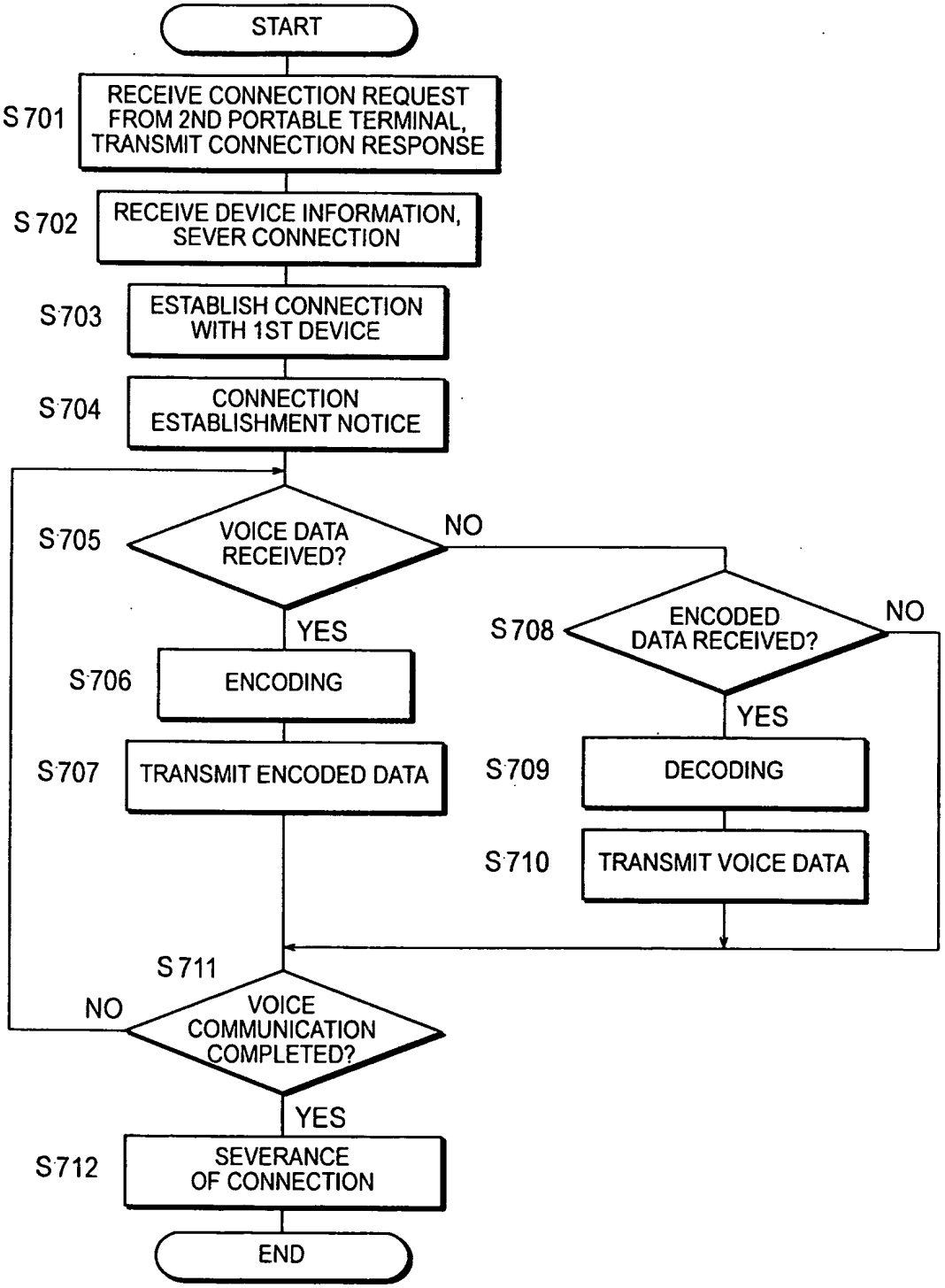
[Fig. 61]


10
1ST PORTABLE TERMINAL
30E
1ST DEVICE
71
BASE STATION
73
BASE STATION
MOBILE SWITCHING CENTER
70 (MOBILE TELECOMMUNICATION NETWORK)
72
2ND PORTABLE TERMINAL
10B
2ND DEVICE
50E
90 (COMPUTER NETWORK)

[Fig. 62]


2ND DEVICE
2ND PORTABLE TERMINAL
1ST PORTABLE TERMINAL
1ST DEVICE
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
CONNECTION REQUEST
CONNECTION RESPONSE
TRANSMISSION REQUEST
DEVICE INFORMATION TRANSMISSION
DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
DEVICE INFORMATION TRANSMISSION
CONNECTION REQUEST
CONNECTION RESPONSE
VOICE DATA TRANSMISSION
ENCODED DATA TRANSMISSION
VOICE DATA TRANSMISSION
VOICE DATA TRANSMISSION
ENCODED DATA TRANSMISSION
VOICE DATA TRANSMISSION

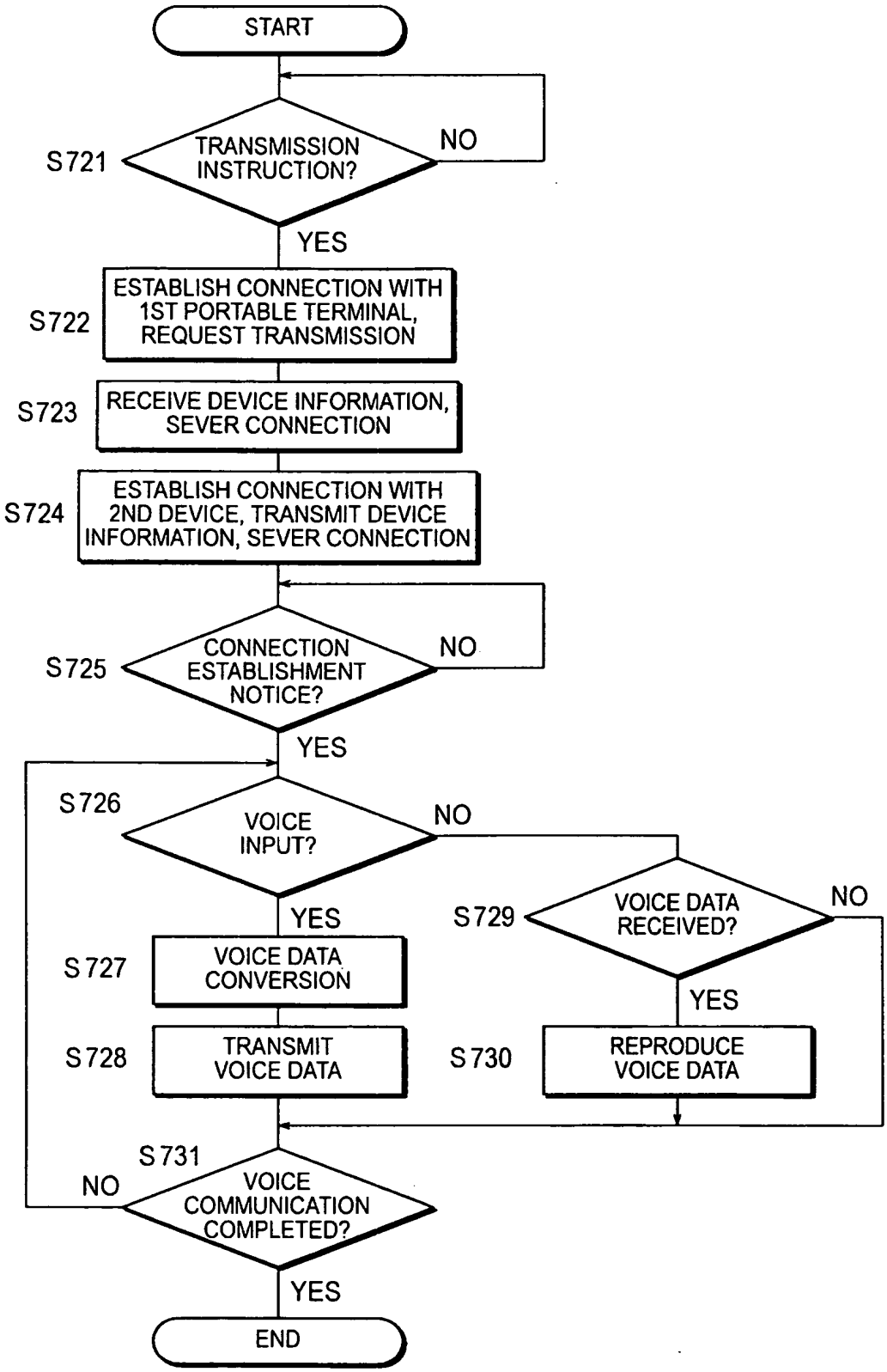
[Fig. 63]


START
S701
RECEIVE CONNECTION REQUEST FROM 2ND PORTABLE TERMINAL, TRANSMIT CONNECTION RESPONSE
S702
RECEIVE DEVICE INFORMATION, SEVER CONNECTION
S703
ESTABLISH CONNECTION WITH 1ST DEVICE
S704
CONNECTION ESTABLISHMENT NOTICE
S705
VOICE DATA RECEIVED?
NO
YES
S706
ENCODING
S707
TRANSMIT ENCODED DATA
S708
ENCODED DATA RECEIVED?
NO
YES
S709
DECODING
S710
TRANSMIT VOICE DATA
S711
VOICE COMMUNICATION COMPLETED?
NO
YES
S712
SEVERANCE OF CONNECTION
END

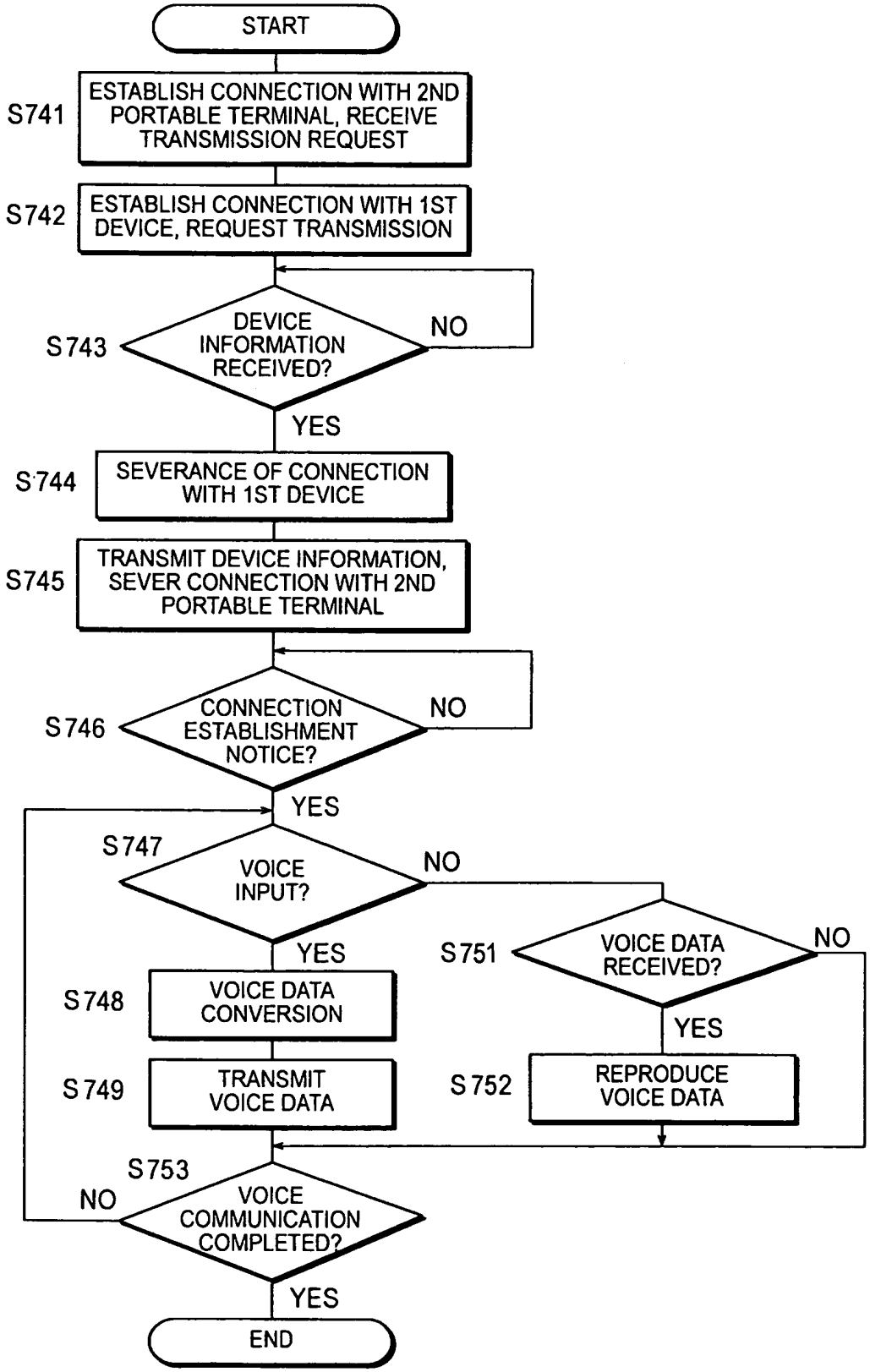
[Fig. 64]

	PROTOCOL	IDENTIFICATION CODE
CONNECTION INFORMATION	TCP/IP	IP ADDRESS
	FTP	SERVER NAME DIRECTORY PASSWORD
	HTTP	URL : SERVER NAME DIRECTORY PASSWORD

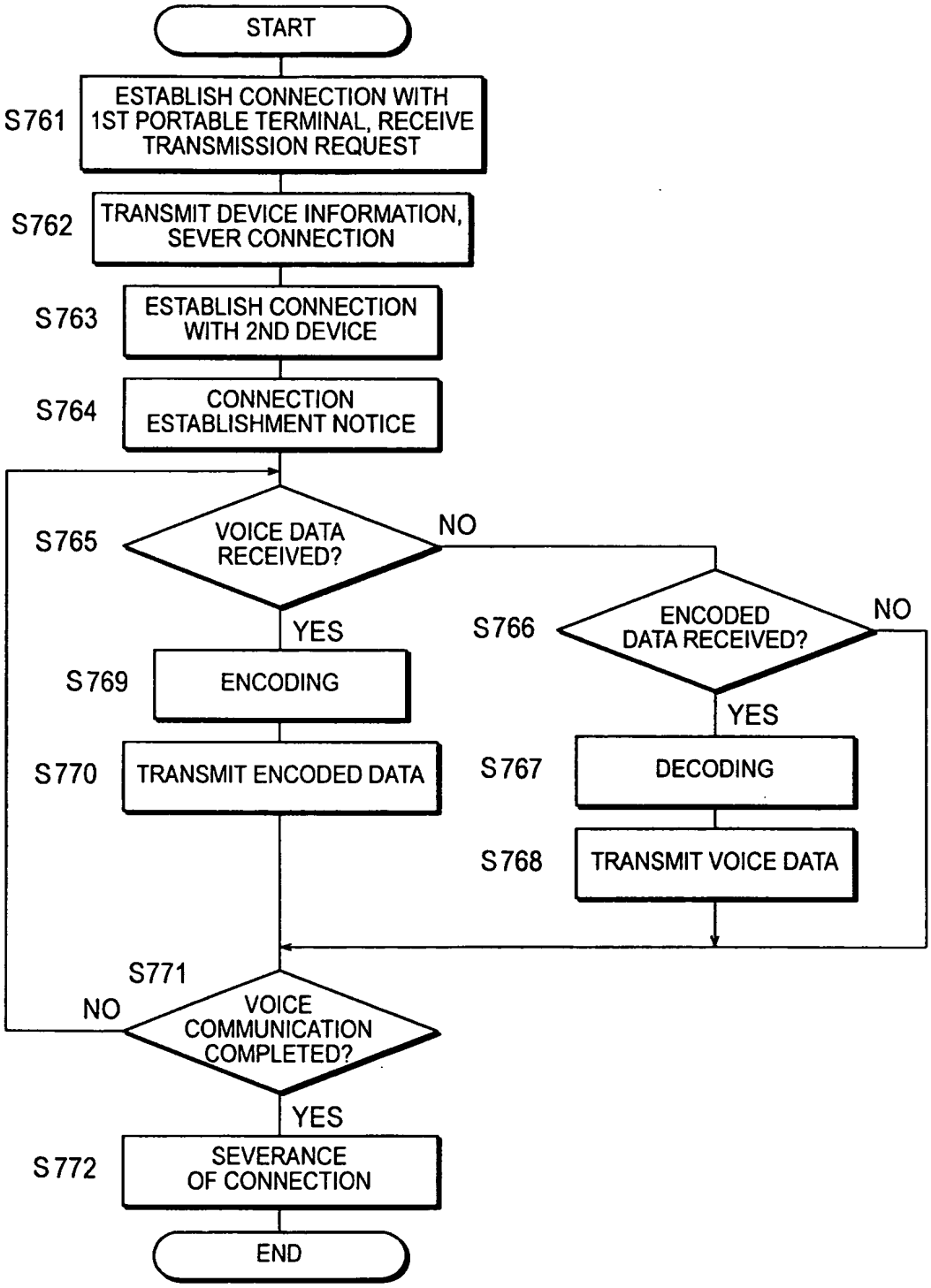
[Fig. 65]


START
S721
TRANSMISSION INSTRUCTION?
NO
YES
S722
ESTABLISH CONNECTION WITH 1ST PORTABLE TERMINAL, REQUEST TRANSMISSION
S723
RECEIVE DEVICE INFORMATION, SEVER CONNECTION
S724
ESTABLISH CONNECTION WITH 2ND DEVICE, TRANSMIT DEVICE INFORMATION, SEVER CONNECTION
S725
CONNECTION ESTABLISHMENT NOTICE?
NO
YES
S726
VOICE INPUT?
NO
YES
S727
VOICE DATA CONVERSION
S728
TRANSMIT VOICE DATA
S729
VOICE DATA RECEIVED?
NO
YES
S730
REPRODUCE VOICE DATA
S731
VOICE COMMUNICATION COMPLETED?
NO
YES
END

[Fig. 66]


START
S741
ESTABLISH CONNECTION WITH 2ND PORTABLE TERMINAL, RECEIVE TRANSMISSION REQUEST
S742
ESTABLISH CONNECTION WITH 1ST DEVICE, REQUEST TRANSMISSION
S743
DEVICE INFORMATION RECEIVED?
NO
YES
S744
SEVERANCE OF CONNECTION WITH 1ST DEVICE
S745
TRANSMIT DEVICE INFORMATION, SEVER CONNECTION WITH 2ND PORTABLE TERMINAL
S746
CONNECTION ESTABLISHMENT NOTICE?
NO
YES
S747
VOICE INPUT?
NO
YES
S748
VOICE DATA CONVERSION
S749
TRANSMIT VOICE DATA
S751
VOICE DATA RECEIVED?
NO
YES
S752
REPRODUCE VOICE DATA
S753
VOICE COMMUNICATION COMPLETED?
NO
YES
END

[Fig. 67]


START
S761
ESTABLISH CONNECTION WITH 1ST PORTABLE TERMINAL, RECEIVE TRANSMISSION REQUEST
S762
TRANSMIT DEVICE INFORMATION, SEVER CONNECTION
S763
ESTABLISH CONNECTION WITH 2ND DEVICE
S764
CONNECTION ESTABLISHMENT NOTICE
S765
VOICE DATA RECEIVED?
NO
YES
S766
ENCODED DATA RECEIVED?
NO
YES
S769
ENCODING
S770
TRANSMIT ENCODED DATA
S767
DECODING
S768
TRANSMIT VOICE DATA
S771
NO
VOICE COMMUNICATION COMPLETED?
YES
S772
SEVERANCE OF CONNECTION
END

[Document's Name] Abstract

[ABSTRACT]

[PURPOSE] To realize a function that a portable terminal does not have using another device located nearby without being restricted by the functions of the portable terminal while having a general applicability concerning data transmission and reception.

[CONSTITUTION] A data transmit-receive system comprising: a portable terminal 10 comprising a communicating means for communicating through a mobile telecommunication network 70 and a local communication means for communicating in short distances; a first device 30 comprising a communicating means for communicating through a computer network and a local communication means corresponding to said local communication means, and transmitting a device information to said portable terminal using said local communication means; and a second device 50 comprising a communicating means for communicating with said portable terminal through said mobile telecommunication network, and a communicating means for communicating with said first device through said computer network, and transmitting data to said first device through said computer network based on said device information obtained from said portable terminal through said mobile telecommunication network.

[Selected Figure] Fig. 1

INFORMATION OF APPLICANT' S PERSONAL HISTORY

Identification Number 【000006079】

1. Date of Change: July 20, 1994
【Reason for change】 Change of Name

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Azuchi-Machi, Chuo-Ku, Osaka-Shi, Osaka
Name: MINOLTA CO., LTD.